

# **JOHN DEERE 450D CRAWLER BULLDOZER**

## **OPERATORS MANUAL JOHN DEERE 450D CRAWLER BULLDOZER**

OMT80145 J4    English

**JOHN DEERE DUBUQUE WORKS  
OMT80145 J4**

LITHO IN THE U.S.A. (REVISED)  
ENGLISH

# Introduction

Read this manual carefully to learn how to operate and service your machine correctly.

## SAFETY



**CAUTION:** This safety alert symbol indicates important safety messages in this manual. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.

## DIRECTIONS

Left and right sides of the machine are determined by facing direction of machine forward travel.

## MEASUREMENTS

U.S. customary measurements are shown with SI metric equivalents immediately following in parenthesis.

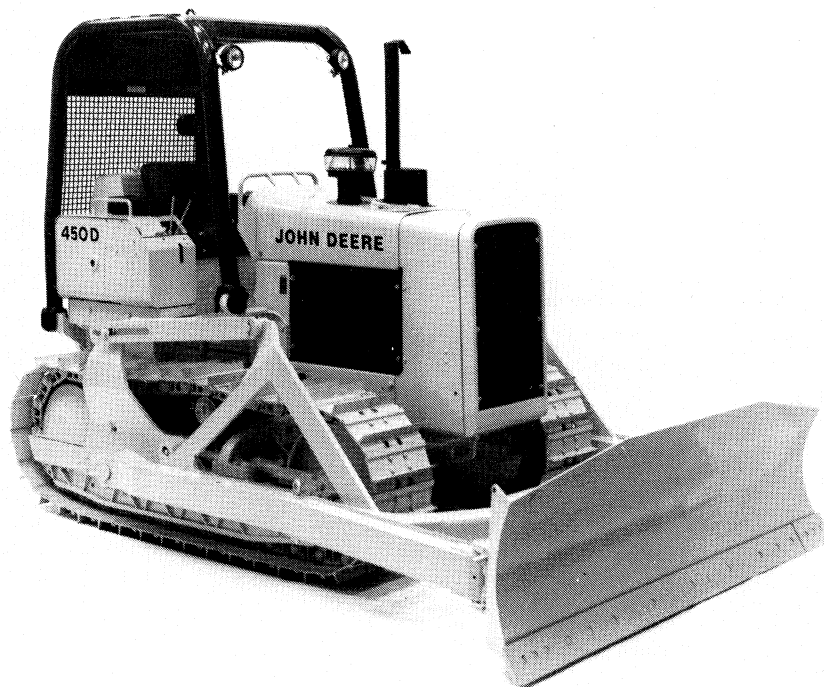
## WARRANTY

The warranty on this machine appears on your copy of the purchase order which you should have received from your dealer when making your purchase. This warranty provides you the assurance that John Deere will back its products where defects appear within the warranty period. In some circumstances, John Deere also provides field improvements, often without charge to the customer, even if the product is out of warranty.

Warranty and field improvements are a part of John Deere's product support program for customers who operate and maintain their equipment as described in this manual. Should the equipment be abused, or modified to change its performance beyond the original factory specifications, the warranty will become void and field improvements may be denied. Setting fuel delivery above specifications or otherwise overpowering machines will result in such action.

## MACHINE NUMBERS

Write your product identification number (PIN) and serial numbers on pages provided in Machine Numbers chapter. Your dealer needs this information when you order parts.



*450D Crawler Bulldozer*

# Contents

|                               |     |
|-------------------------------|-----|
| Safety .....                  | 2   |
| Operator's Station .....      | 9   |
| Break-In .....                | 12  |
| Pre-Start Inspection .....    | 13  |
| Operating the Engine .....    | 14  |
| Driving the Crawler .....     | 20  |
| Operating the Crawler .....   | 27  |
| Attachments .....             | 34  |
| Transporting .....            | 36  |
| Fuels and Lubricants .....    | 38  |
| Periodic Maintenance .....    | 45  |
| As Required .....             | 46  |
| Daily or Every 10 Hours ..... | 48  |
| 200 Hours .....               | 52  |
| 500 Hours .....               | 54  |
| 1000 Hours .....              | 57  |
| Trouble Shooting .....        | 66  |
| Maintenance .....             | 71  |
| Storage .....                 | 98  |
| Crime Prevention Tips .....   | 100 |
| Specifications .....          | 102 |
| Machine Numbers .....         | 105 |
| Alphabetical Index .....      | 106 |

# Safety

## AVOID FIRE HAZARDS

Be prepared if an accident or fire should occur. Know where the first aid kit and the fire extinguishers are located — know how to use them.

Do not smoke while refueling or handling highly flammable material.

Shut off the engine when refueling.

Use care in refueling if the engine is hot.

Do not use open pans of gasoline or diesel fuel for cleaning parts. Use good commercial, nonflammable solvents.

Provide adequate ventilation when charging batteries.

Do not check battery charge by placing metal objects across the posts.

Do not allow sparks or open flame near batteries.

Do not smoke near battery.

Never check fuel, battery electrolyte, or coolant levels with an open flame.

Never use an open flame to look for leaks anywhere on the equipment.

Never use an open flame as light anywhere on or around the equipment.

When preparing engine for storage, remember that inhibitor is volatile and therefore dangerous. Seal and tape openings after adding the inhibitor. Keep container tightly closed when not in use.

Inspect electrical wiring for worn or frayed insulation. Install new wiring if wires are damaged.





## PREVENT FIRES BEFORE STARTING ENGINE

If machine is equipped with a fire extinguisher, check for correct charge.

Open both side shields and grille and remove trash.

Remove trash from other bottom guards, drive lines, batteries, hydraulic lines, fuel tank and operator's station.

Check for leaking fuel lines, hydraulic lines, hoses, or fittings with a piece of cardboard or wood. Do not use your hands. Tighten loose fittings. If lines are bent or hoses kinked, install new parts.

T82;CRSA A 080883

## PREVENT FIRES AFTER STOPPING ENGINE

Temperature in engine compartment may go up immediately after you stop the engine. **BE ON GUARD FOR FIRES DURING THIS PERIOD.**

Before you clean trash from the engine compartment, wait until the engine has cooled. Open side shields to cool the engine faster. While the engine cools, clean trash from other areas.

T82;SKSA B 061282

## HANDLE STARTING FLUID SAFELY

If your machine is equipped with a starting fluid starting aid, remember starting fluid is highly flammable. **DO NOT** incinerate or puncture a starting fluid container. **DO NOT** store a starting fluid container in a high-temperature area.



88A;T90207 T82;CRSA G 070684

T83;450D P03 080984

## UNDERSTAND CORRECT MACHINE OPERATION AND SERVICE

Only qualified people should operate and service the machine.

Learn the location and purpose of all controls, instruments, indicators, and labels.

Be sure you understand a service procedure before you work on the machine.

Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.

If it is necessary to make checks with the engine running, ALWAYS USE TWO PEOPLE — with the operator at the controls, able to see the person doing the checking.

KEEP HANDS AWAY FROM MOVING PARTS.



88A;T87358 T82;EXSA AG 130684

## WEAR PROTECTIVE CLOTHING

Wear fairly tight clothing . . . and safety equipment.



88A;T85056 T82;EXSA B 060684

## PROTECT AGAINST NOISE

Prolonged exposure to loud noise can cause impairment or loss of hearing. Wear a suitable hearing protective device such as earmuffs (A) or earplugs (B) to protect against objectionable or uncomfortable loud noise.

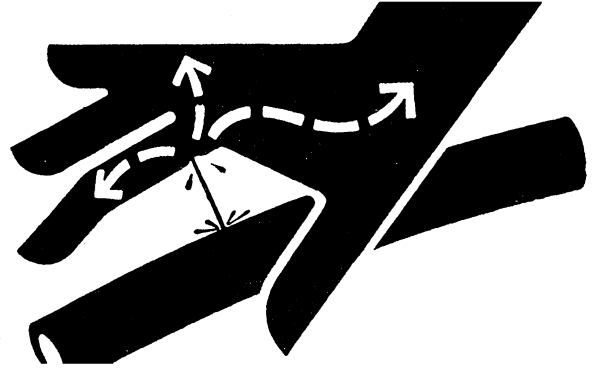


88A;X7662 T82;BHSA E 070684

## AVOID HIGH-PRESSURE FLUIDS

Escaping fluid under pressure can penetrate the skin causing serious injury. Relieve pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Keep hands and body away from pinholes and nozzles which eject fluids under high pressure. Use a piece of cardboard or paper to search for leaks.

If ANY fluid is injected into the skin, it must be surgically removed within a few hours by a doctor familiar with this type injury or gangrene may result.



44A;X9811 T82;BHSA F 140984

## START ENGINE FROM OPERATOR'S SEAT

Avoid possible injury or death from machine runaway.

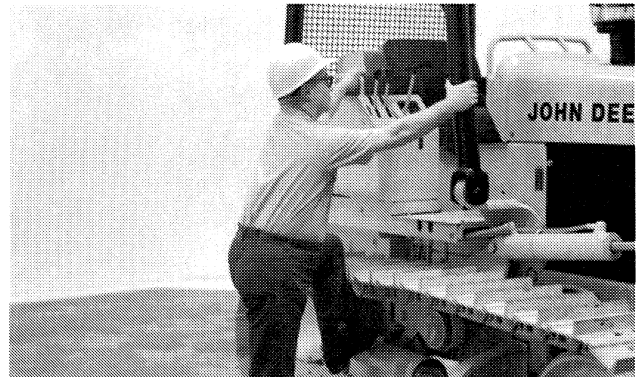
Do not start engine by shorting across starter terminals. Machine will start in gear and will move if normal circuitry is bypassed.

NEVER start engine while standing on ground. Start engine only from operator's seat, with gear shift lever in neutral position, HLR lever in neutral position and locked, and brake lock lever engaged.

T82;CRSA AD 280884

## USE HAND HOLDS AND STEPS

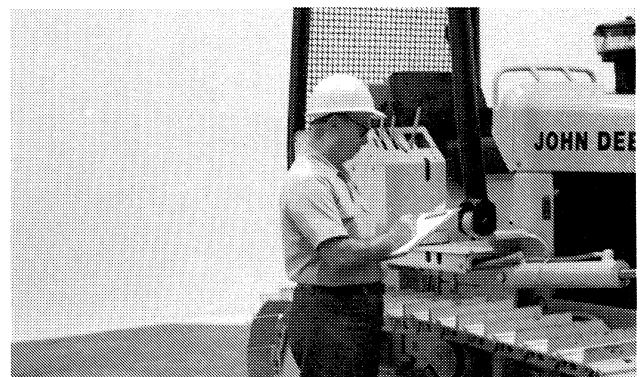
When you get on and off the machine, use handholds and steps.



88A;T90204 T82;CRSA C 210283

## INSPECT MACHINE

Inspect your machine carefully each day before you start it. See "Pre-Start Inspection".



88A;T90205 T82;CRSA D 210283

## OPERATE MACHINE SAFELY

DO use your seat belt if your machine has a roll-over protective structure (ROPS).

DO NOT use your seat belt if your machine does not have a ROPS.



88A;T90206 T82;CRSA E 180383

Before you move any equipment, be sure all persons are away from the machine.

When the machine is operating, ONLY the operator should be on it.

Keep operating area level.

T82;CRSA F 210283

## DRIVE CRAWLER BULLDOZER SAFELY

Drive carefully:

- on slopes.
- where room is limited.
- over rough ground, curbs, or tracks.
- near a ditch or excavation.

For traveling:

- carry blade low.
- keep machine in gear at all times.

Use accessory lights and safety devices to warn operators of other vehicles.



88A;T90208 T82;CRSA H 210283

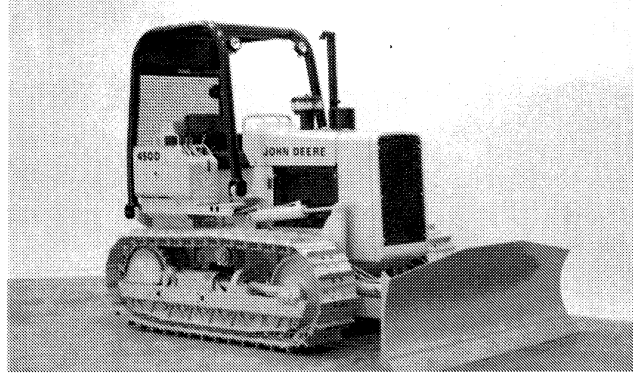
T83;450D P06 080984

## **PARK SAFELY**

Be sure all equipment is on the ground or locked in position.

Place gear shift lever in neutral position, place HLR lever in neutral position and locked. Apply and lock foot brake.

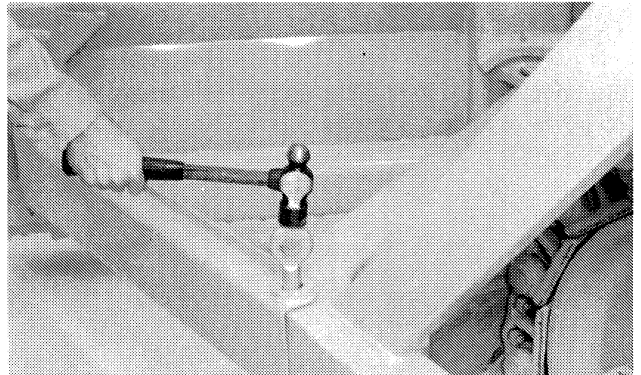
Remove keys from switches and locks.



88A;T90209 T82;CRSA I 210283

## **PROTECT AGAINST FLYING DEBRIS**

When you drive connecting pins in or out, guard against injury from flying pieces of metal or debris. Wear goggles or safety glasses and hard hat.

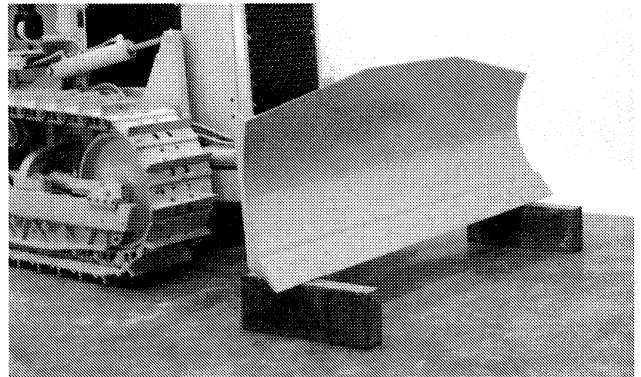


88A;T90211 T82;CRSA K 040984

## **SUPPORT RAISED EQUIPMENT**

Do not work under raised equipment unless it has a support under it.

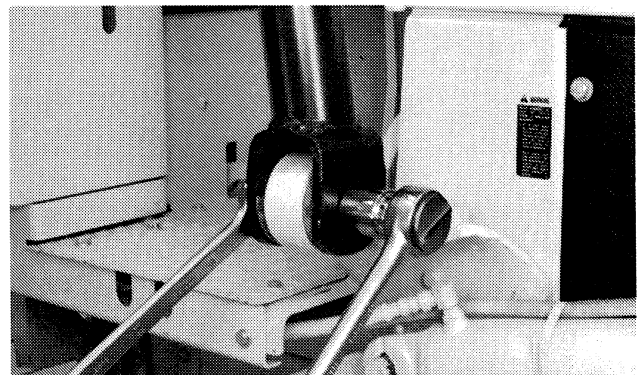
If a support is not available, lower equipment to the ground.



87A;T90212 T82;CRSA L 010683

## **KEEP ROPS INSTALLED PROPERLY**

If ROLL-OVER protective equipment is loosened or removed for any reason, make certain all parts are reinstalled correctly. Tighten mounting bolts to proper torque. The protection offered by ROPS will be impaired if the ROPS is subject to structural damage, has been involved in an overturn incident or is in anyway altered. Damaged ROPS should be replaced, not reused.

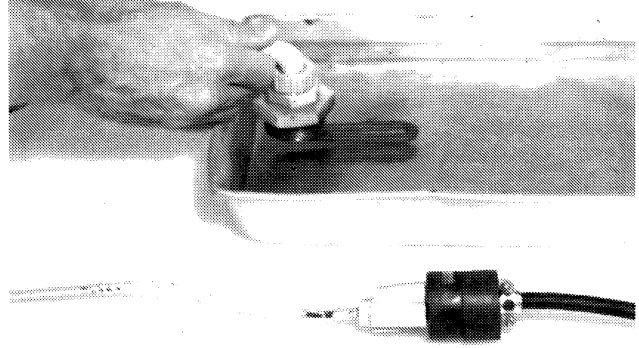


88A;T90213 T82;CRSA M 120483

### **TEST COOLANT HEATER IN LIQUID ONLY**

Use a heavy-duty grounded cord to connect coolant heater to electrical power.

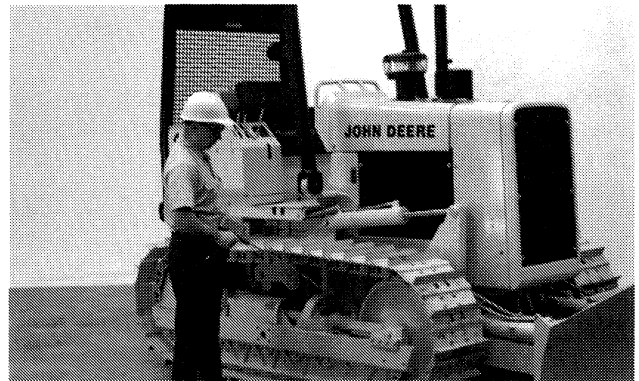
Do not plug into electrical power unless heating element is immersed in coolant. Sheath could burst and result in personal injury.



88A/T87098 T82/BHSA T 110183

### **CLEAN THE MACHINE REGULARLY**

Remove any grease, oil or debris build-up to avoid possible injury or machine damage.

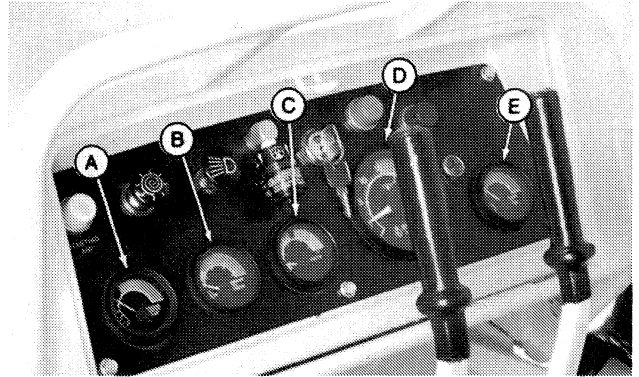


88A/T90210 T82/CRSA J 130984

# Operator's Station

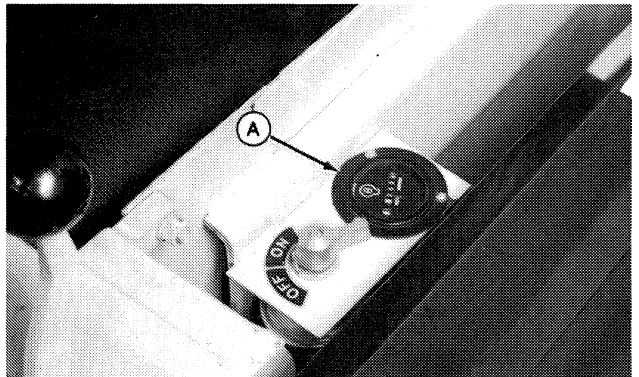
## GAUGES

- |                              |                                |
|------------------------------|--------------------------------|
| A—Engine Coolant Temperature | D—Tachometer                   |
| B—Engine Oil Pressure        | E—Transmission Oil Temperature |
| C—Voltmeter                  |                                |



88A;T90400 T82;CROS A 250283

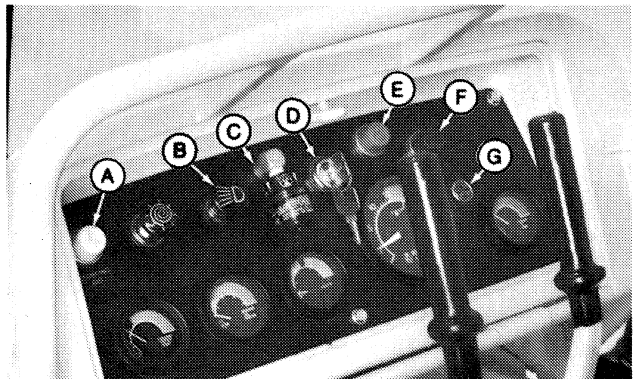
A—Hourmeter



88A;T90401 T82;CROS B 180383

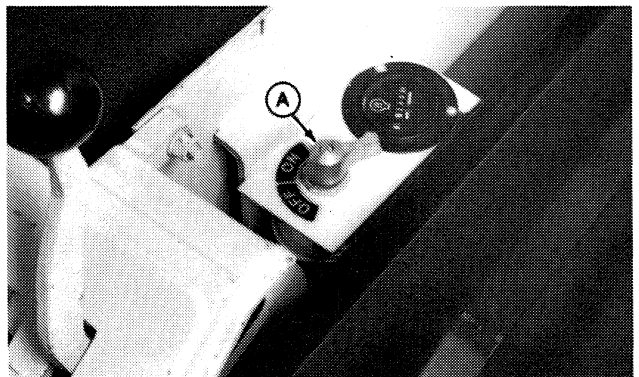
## INDICATORS AND SWITCHES

- |                             |  |
|-----------------------------|--|
| A—Start Aid Switch          | E—Start Switch                           |
| B—Light Switch              | F—Horn Switch                            |
| C—Air Restriction Indicator | G—Hydraulic Filter Restriction Indicator |
| D—Key Switch                |  |



88A;T90402 T82;CROS C 250283

A—Battery Disconnect Switch



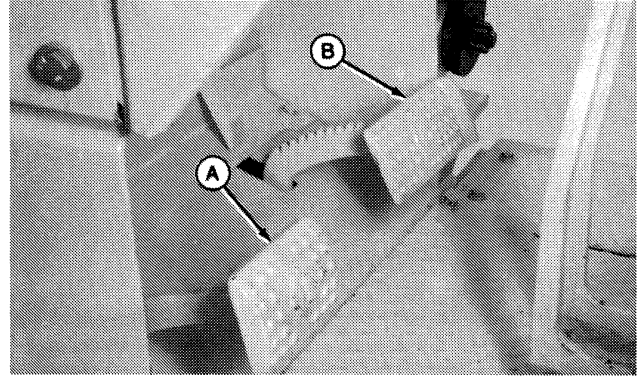
88A;T90403 T82;CROS D 180383



## PEDALS—LEVER STEERING

A—Clutch

B—Brake



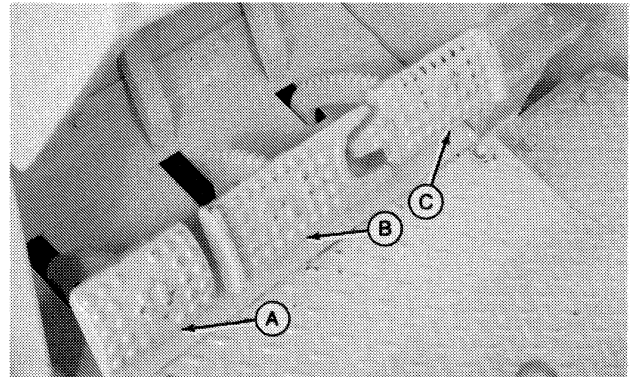
88A;T90404 T82;CROS E 040984

## PEDALS—PEDAL STEERING

A—Clutch

B—Left Steering

C—Right Steering

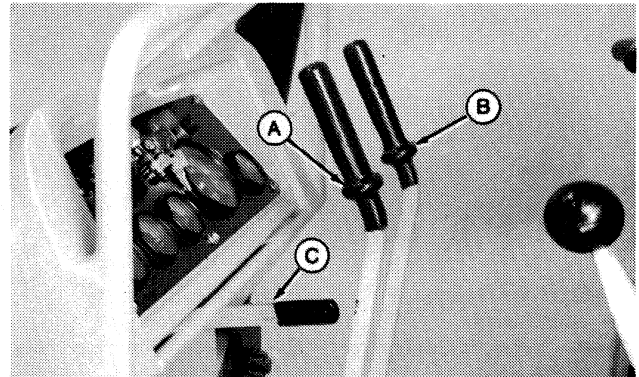


88A;T5933AK T82;CROS AI 040984

## LEVERS

A—Left Steering  
B—Right Steering

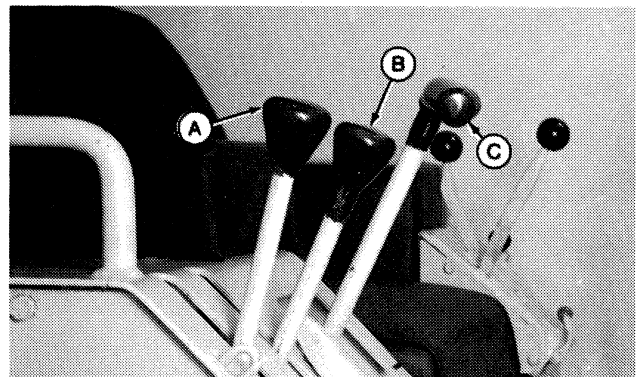
C—Brake Lock



88A;T90405 T82;CROS F 180383

A—Attachment Control  
B—Bulldozer Auxiliary Control

C—Bulldozer Control



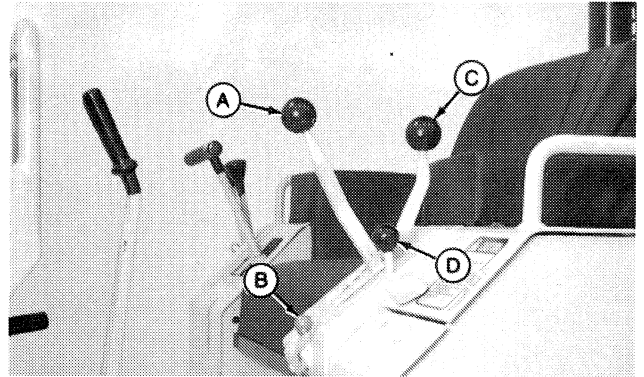
88A;T90406 T82;CROS G 180383



## Operator's Station

A—High-Low-Reverse  
B—H-L-R Neutral Lock

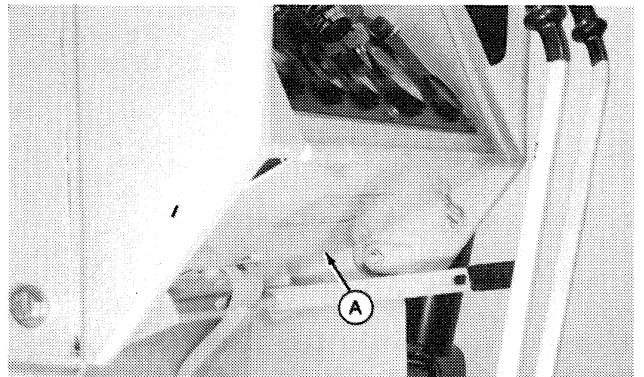
C—Transmission Shift Lever  
D—Speed Control Lever



88A/T90407 T82/CROS H 250283

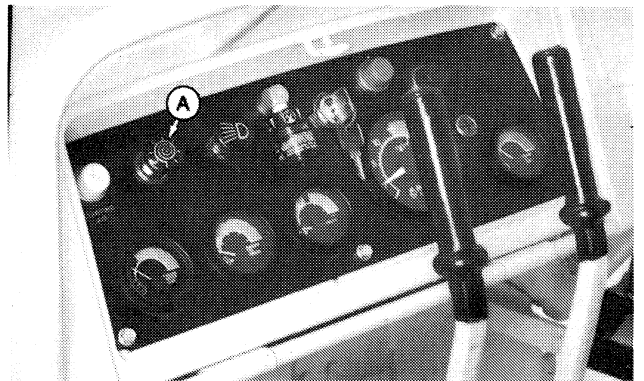
## VANDAL SHIELD

A—Stored Position



88A/T90409 T82/CROS J 180383

## CIGAR LIGHTER (A)



88A/T90415 T82/CROS K 180383

# Break In

## BREAK THE MACHINE IN CORRECTLY

After the first 25 to 30 hours of operation, change the transmission oil filter.

Additional break in services will be done at the After-Sale inspection. See your John Deere dealer for this service.

T82;CRBI B 290884

*NOTE: If air temperatures are above 10°C (50°F), engine oil can be replaced with seasonal viscosity oil earlier than 100 hours.*

During the first 100 hours of operation:

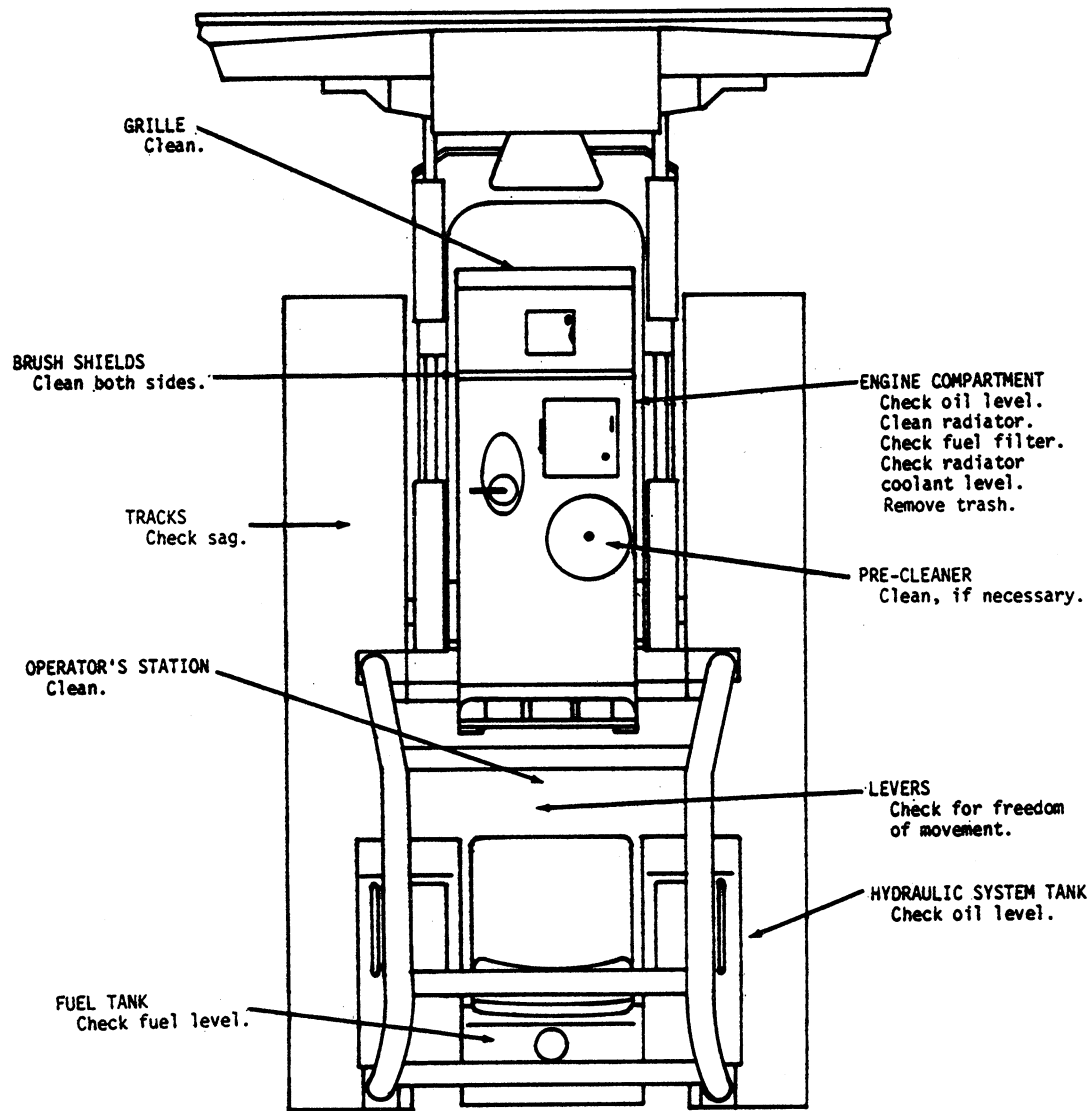
1. Operate engine at normal loads.
2. Avoid excess engine idling.
3. Check engine oil level daily. If oil must be added, use seasonal viscosity oil.
4. Change oil and filter at 100 hours MAXIMUM.
5. Check coolant level and transmission oil level regularly. Watch for leaking fluid. Use only the lubricants and coolant specified in this manual in your machine.
6. Service lubrication points regularly.
7. Tighten easy to reach hardware regularly.
8. Check gauges and indicators often during operation.
9. Warm machine systems carefully, then operate at normal loads.
10. Be alert to the special sounds and feel of your machine.

T82;CRBI A 280884

T83;450D P12 080984

# Prestart Inspection

## INSPECT CRAWLER DAILY BEFORE STARTING



88A/T90468 T82/CRPI A 180383

### Electrical System

Check for worn or frayed wires and loose or corroded connections.

### Equipment and Sheet Metal

Check for bent, broken, or missing parts.

### Hardware

Check for loose or missing hardware.

**Fire extinguisher** - Check charge.

**Fuel System** - Drain fuel filter and fuel tank sump.

### Hydraulic System

Check for leaks, missing or loose clamps, kinked hoses or hoses that rub against each other or other parts.

### Lubrication

Check lubrication points on Periodic Maintenance Chart.

### Protective Devices

Check guards, shields, ROPS, seat belt.

T82/CRPI B 080483

T83/450D P13 080984

# Operating the Engine

## STARTING THE ENGINE



**CAUTION:** Avoid possible injury or death from a runaway machine. Do not start engine by shorting across starter terminals. Machine will start in gear and move if normal starting circuitry is bypassed. Start engine only from operator's seat with gear shift lever in neutral position and HLR lever in neutral position and locked. Apply and lock foot brake. **NEVER** start engine while standing on ground.

**IMPORTANT:** After a false start, do not push start switch until engine stops.

**IMPORTANT:** **DO NOT** try to start engine by towing or pushing. Permanent damage to transmission will result.

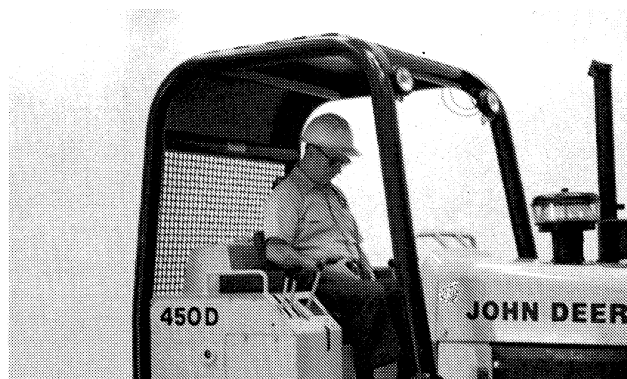
T82;CROE R 280884



**CAUTION:** **DO** use your seat belt if your machine has a roll-over protective structure (ROPS).

**DO NOT** use your seat belt if your machine does not have a ROPS.

1. Fasten seat belt.

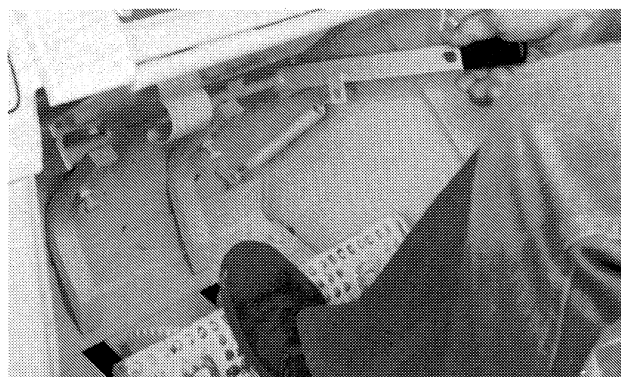


88A;T90206 T82;CROE S 040984

2. To engage brake lock, push down on brake pedal.

3. Hold brake lock lever up while you release brake pedal slowly.

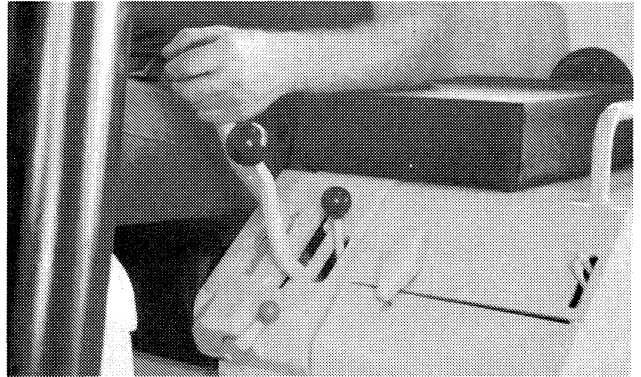
**NOTE:** On machines with pedal steering (as shown) push down on both steering pedals and pull up on brake lock lever to lock the brakes.



88A;T5933AM T82;CROE BG 130984

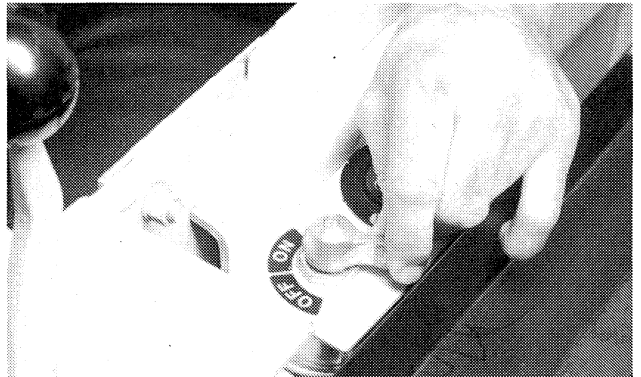
## Operating the Engine

4. Place gear shift lever in the neutral position.
5. Place HLR lever in neutral position and locked.



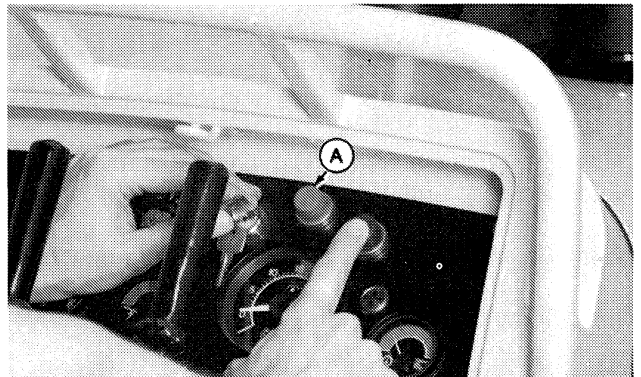
88A;T5933AR T82;CROE BD 130984

6. Open battery compartment and turn battery disconnect switch to ON.



88A;T90474 T82;CROE M 060583

7. Move speed control lever to 1/3 speed position.
8. Turn key switch to ON.
9. Push horn switch to sound horn.
10. Push start switch (A). Do not try to start engine for longer than 20 seconds. Wait 2 minutes before you try again. Release start switch when engine starts.



88A;T90418 T82;CROE C 050984

## USING STARTING FLUID STARTING AID



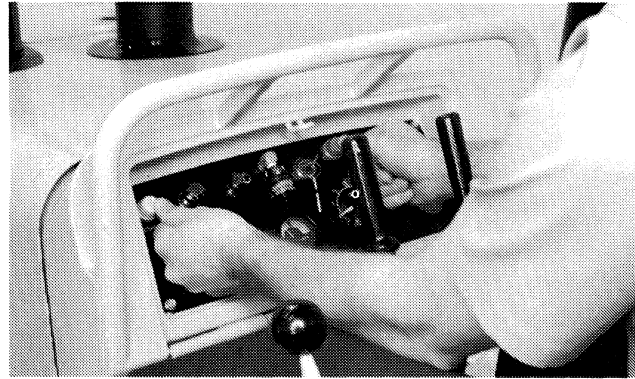
**CAUTION:** Starting fluid is highly flammable.

**IMPORTANT:** Keep starting fluid can in place at all times.

Use starting aid when temperatures are below  $-7^{\circ}\text{C}$  ( $20^{\circ}\text{F}$ ) and only when engine is **COLD**.

1. Turn key switch to ON and push start button.
2. After one or two revolutions of engine crankshaft, push starting aid button at short intervals.

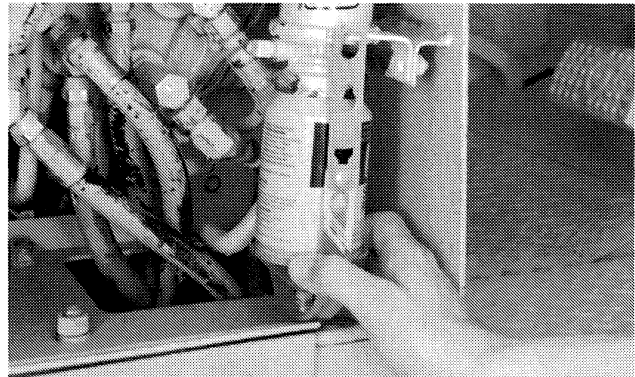
*NOTE: Starting fluid is being injected into engine as long as you push button.*



88A;T90420 T82;CROE E 050984

## INSTALLING START AID CAN

1. Remove two cap screws and open compartment door.
2. Remove empty starting fluid can by turning retainer counterclockwise until the can can be removed.
3. Remove safety cap and spray button from new can.
4. Install new can in bracket.
5. Turn retainer clockwise to tighten can.



88A;T90429 T82;CROE L 130984

T83;450D P16 080984

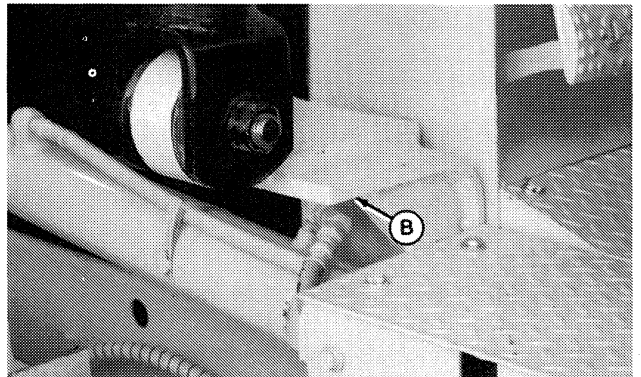
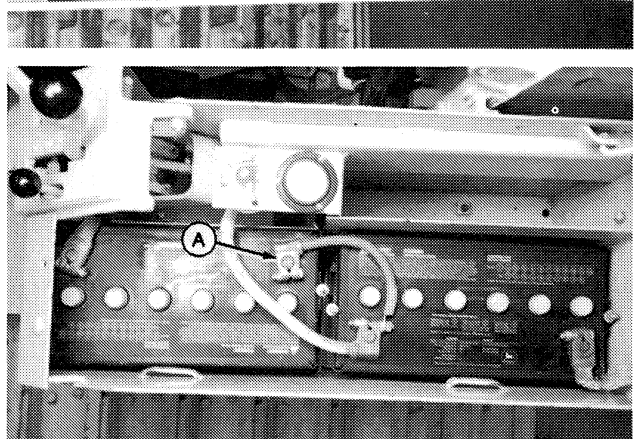
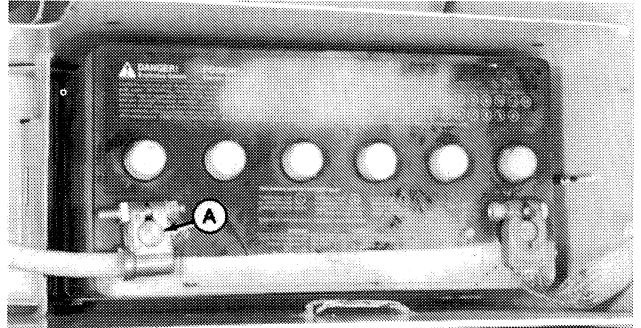
## USING BOOSTER BATTERIES



**CAUTION:** An explosive gas is produced while batteries are in use or being charged. Keep flames or sparks away from the battery area. Make sure the batteries are charged in a well ventilated area.

**IMPORTANT:** The machine electrical system is a 12 volt negative (-) ground.

1. Connect positive (+) booster cable to positive (+) battery terminal (A).
2. Connect negative (-) booster cable to machine frame (B).

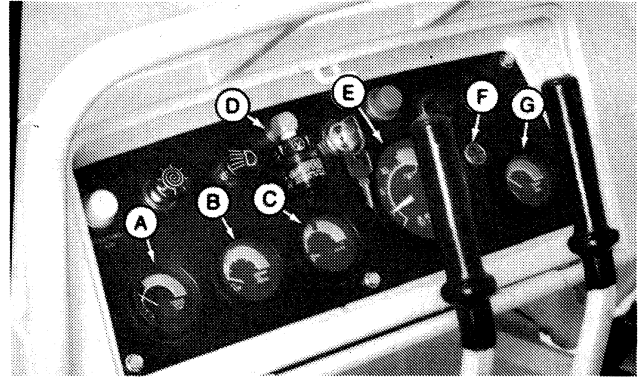


88A;T90421, T90430, T90851 T82;CROE F 050984

## CHECK INSTRUMENTS AFTER STARTING

**IMPORTANT:** If a gauge or indicator does not operate as shown below, **IMMEDIATELY STOP THE ENGINE.** Find and correct the cause.

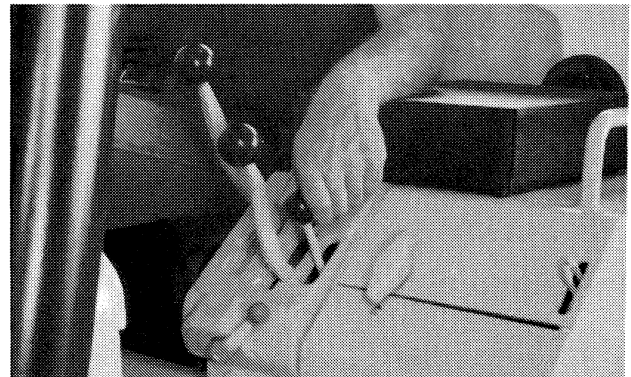
| Gauge or Indicator                       | Immediately After Starting | Normal Operation After Warm-Up |
|--|----------------------------|--------------------------------|
| A—Engine Coolant Temperature             | Black zone                 | Green zone                     |
| B—Engine Oil Pressure                    | Green zone                 | Green zone                     |
| C—Voltmeter                              | Green zone                 | Black zone                     |
| D—Air Filter Restriction Indicator       | Clear                      | Clear                          |
| E—Tachometer                             | 1/3 Speed                  | 1/2 Speed                      |
| F—Hydraulic Filter Restriction Indicator | Glow                       | Off                            |
| G—Transmission Oil Temperature Gauge     | Green zone                 | Green zone                     |



88A/T90422 T82;CROE G 180383

## WARM UP ENGINE

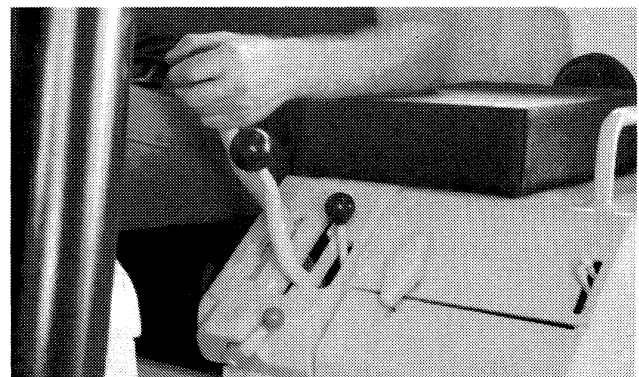
1. Before moving machine, run engine at 1/2 speed for 5 minutes.
2. Do not run engine at fast or slow idle.
3. Operate machine under light loads for first 30 minutes.
4. Check instruments regularly.



88A/T5933AL T82;CROE BE 290884

## STOPPING THE ENGINE

1. Move HLR lever to neutral "N". Turn HLR neutral-lock lever to lock position.
2. Place gear shift lever in the neutral position.

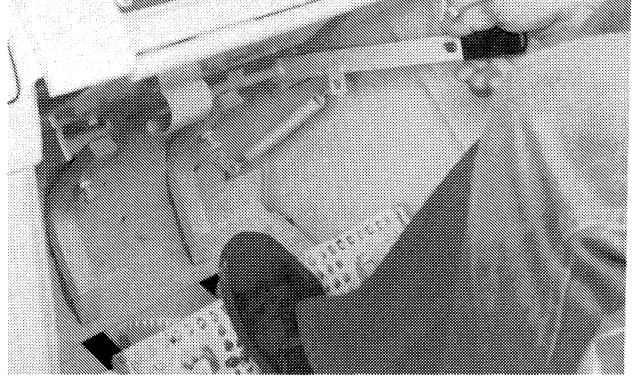


88A/T5933AR T82;CROE BF 290884



3. To engage brake lock push down on brake pedal.
4. Hold brake lock lever up while you release brake pedal slowly.

**NOTE:** *On machines with pedal steering (as shown), push down on both steering pedals and pull up on brake lock lever to lock the brakes.*



88A;T5933AM T82;CROE BH 050984

**IMPORTANT:** To avoid damage to turbocharger, run engine at 1/2 speed **NO LOAD** for 2 minutes.

5. Move speed control lever to slow idle position.
6. Turn key switch counterclockwise to "OFF".
7. Move bulldozer control lever to lower blade to ground.
8. Release hydraulic pressure by moving control lever until equipment does not move.



88A;T90424 T82;CROE K 050984

## EMERGENCY STOPPING

1. Depress clutch pedal or move HLR lever to neutral.
2. Apply machine brake.

**NOTE:** *On machines with pedal steering, depress overlapping portion of steering pedals to apply brake.*



**CAUTION:** If blade is dropped while machine is moving rapidly down a steep hill, machine may overturn.

As the last resort, drop the blade.

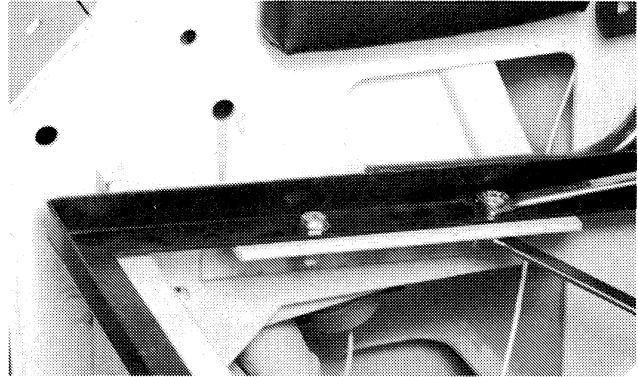
T82;CROE AF 130984

T83;450D P19 130984

# Driving the Crawler

## ADJUST SEAT

1. Remove seat cushion.
2. Remove four cap screws and nuts.
3. Move seat frame to new position.
4. Install cap screws and nuts.
5. Install cushion.



88A;T90561 T82;CRDM V 290884

## DRIVE MACHINE CAREFULLY



**CAUTION:** DO NOT coast the machine.

**IMPORTANT:** During freezing weather, park machine on a hard surface to prevent tracks from freezing to the ground. Clean debris from tracks.

If tracks are frozen to the ground, move machine carefully to prevent damage to drive train and tracks.

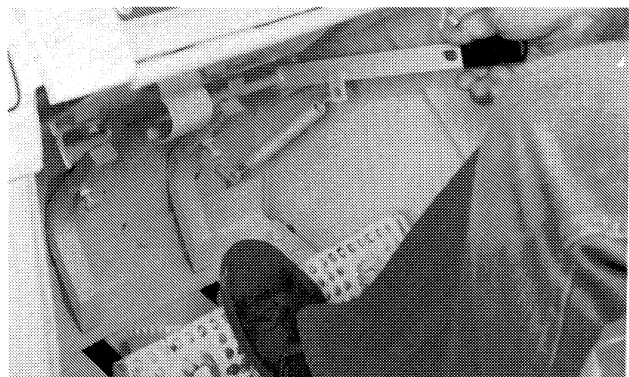
**IMPORTANT:** If engine stops under load, remove load. Start engine immediately. Run engine 30 seconds at 1/2 speed before you add load.

T82;CRDM R 080483

## DISENGAGE BRAKE LOCK

1. Push down on brake pedal.
2. Push down on brake lock lever and release brake pedal.

**NOTE:** On machines with pedal steering (as shown), push down on both steering pedals and push down on brake lock lever to release the brakes.



88A;T5933AM T82;CRDM BD 130984

## SHIFTING THE TRANSMISSION

1. Move speed control lever to slow idle.
2. Push down clutch pedal.



88A;T90439 T82;CRDM B 180383

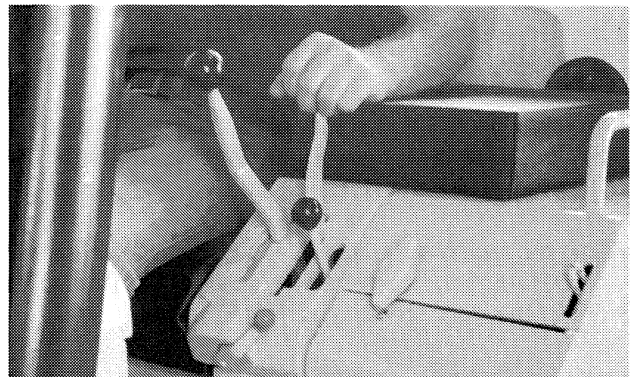
When engine speed is 1500 to 2500 rpm, machine travel speed will be (shown in mph [km/h]):

| Gear | High                    | Low                    | Reverse                 |
|------|-------------------------|------------------------|-------------------------|
| 1    | 1.1 (1.8) to 1.8 (2.9)  | 0.8 (1.2) to 1.3 (2.1) | 1.0 (1.7) to 1.7 (2.7)  |
| 2    | 1.7 (2.8) to 2.8 (4.5)  | 1.2 (1.9) to 2.0 (3.2) | 1.6 (2.6) to 2.7 (4.3)  |
| 3    | 2.6 (4.2) to 4.3 (6.9)  | 1.8 (2.9) to 3.0 (4.8) | 2.4 (4.0) to 4.1 (6.6)  |
| 4    | 4.0 (6.5) to 6.7 (10.8) | 2.9 (4.6) to 4.7 (7.6) | 3.9 (6.2) to 6.4 (10.3) |

T82;CRDM D 080483

**NOTE:** Stop machine before moving gear shift lever.

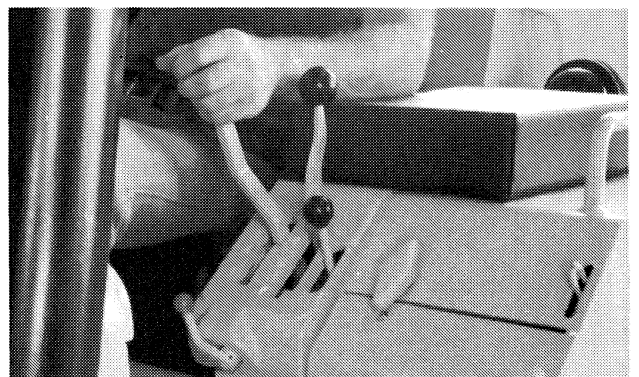
3. Move shift lever to selected gear.
4. Release clutch pedal slowly.



88A;T5933AN T82;CRDM AY 290884

**NOTE:** H-L-R lever can be moved when machine is moving.

5. Disengage neutral lock and move H-L-R lever to selected range.



88A;T5933AP T82;CRDM AZ 290884

## STEERING THE MACHINE—LEVER STEERING

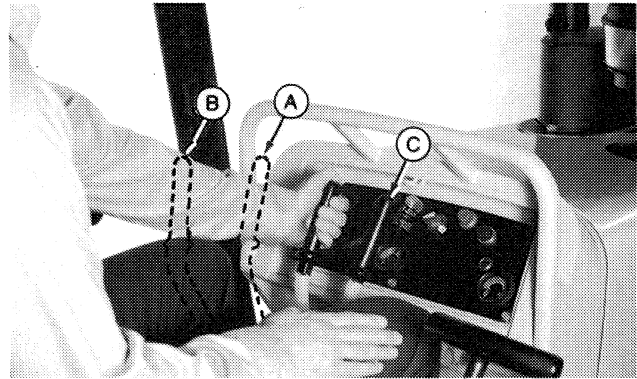


**CAUTION:** If the machine does not steer properly, do not operate it. See your John Deere dealer for service.

1. With the machine traveling forward, pull left lever until rotation of left track is slowed (A). Machine will turn left. Pull the right lever (C) to turn right.

**IMPORTANT:** Move levers only far enough to stop track. If too much force is used to pull the steering lever, the self-adjuster may overtighten the brakes.

2. To turn the machine faster, pull the lever further (B) until track stops.



88A;T90441 T82;CRDM E 050984

## STEERING THE MACHINE—PEDAL STEERING

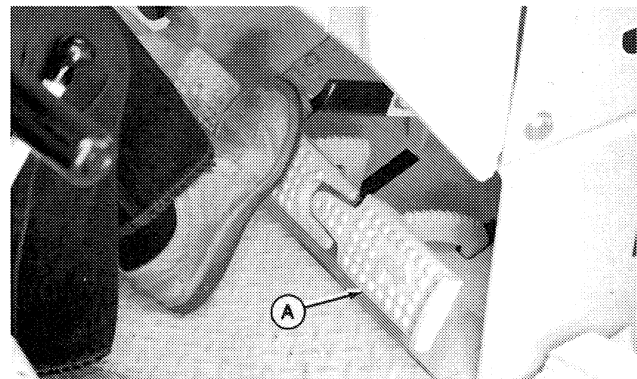


**CAUTION:** If the machine does not steer properly, do not operate it. See your John Deere dealer for service.

1. With the machine traveling forward, push left steering pedal until rotation of left track is slowed. Machine will turn left. Push the right steering pedal (A) to turn right.

**IMPORTANT:** Push pedals only far enough to stop track. If too much force is used to push the pedals, the self-adjuster may overtighten the brakes.

2. To turn the machine faster, push the pedal until track stops.



88A;T5933AH T82;EXDM BA 290884

T83;450D P22 080984

## STOPPING THE MACHINE

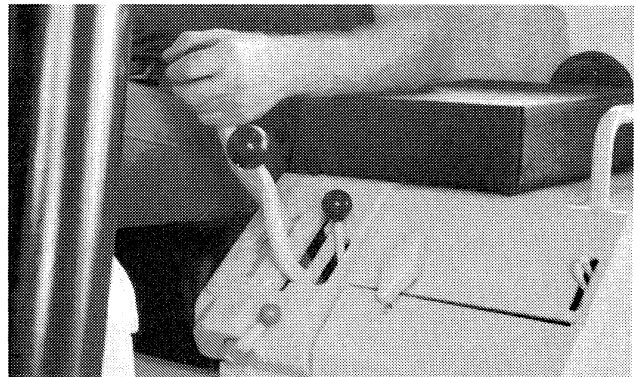
**⚠ CAUTION:** The lever steer machines will de-clutch both steering clutches when both levers are simultaneously pulled back. The pedal steer machines **WILL NOT** declutch either steering clutch when both steering pedals are simultaneously depressed. For pedal machines, always depress clutch pedal or shift HLR to neutral before braking. Pedal steering was designed this way to avoid indexing of the machine when both pedals are simultaneously applied or released.

T82;CRDM BE 130984

## PARKING THE MACHINE

1. Lower all equipment to ground.
2. Place gear shift lever in neutral position. Move HLR lever to neutral and engage neutral lock.
3. Push down brake pedal and engage brake lock.

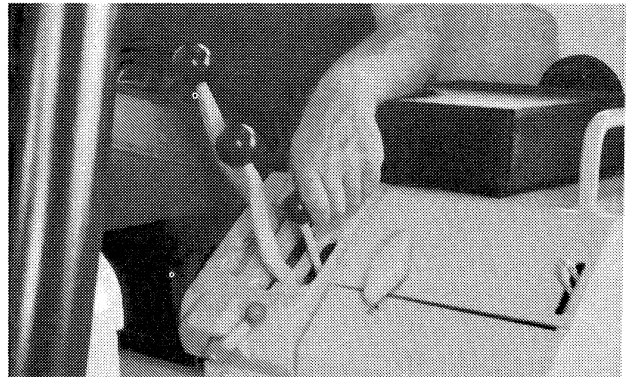
*NOTE: On machines with pedal steering, the brake is engaged by pushing the steering pedals down and pulling the brake lock lever up.*



88A;T5933AR T82;CRDM BB 290884

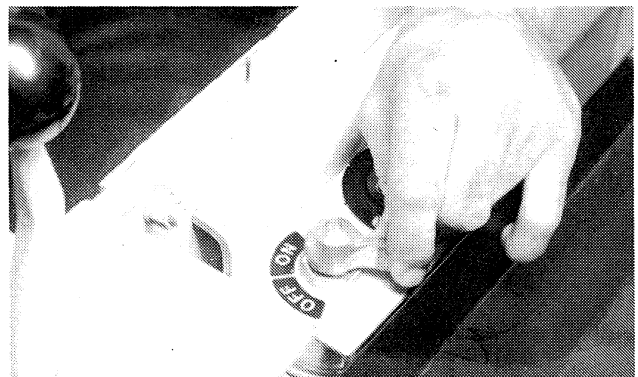
**IMPORTANT:** To avoid damage to turbocharger, run engine at 1/2 speed **NO LOAD** for 2 minutes.

4. Move speed control lever to slow idle.
5. Turn key switch counterclockwise to "OFF". Remove key.
6. Release all hydraulic pressure by moving hydraulic control levers until equipment does not move.



88A;T5933AL T82;CRDM BC 290884

7. Open battery compartment and turn battery disconnect switch counterclockwise to "OFF".



88A;T90474 T82;CRDM H 180383

### **LOCK VANDAL SHIELD**

1. Release shield from stored position.
2. While holding steering levers back, move the shield to closed position.
3. Install lock.



88A;T90446 T82;CRDM I 080483

### **LOCK BRAKE-LOCK LEVER**

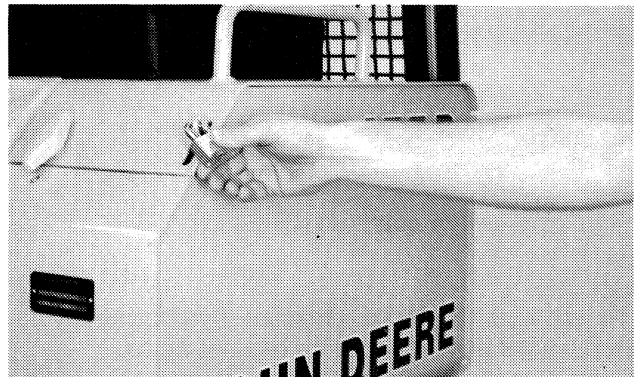
1. To lock lever, install lock through lever and eye bolt.



88A;T90706 T82;CRDM S 210383

### **LOCK COMPARTMENTS**

1. To lock battery compartment, install lock in loop.



88A;T91467 T82;CRDM AR 030583

2. To lock hydraulic reservoir compartment, install a lock in loop.

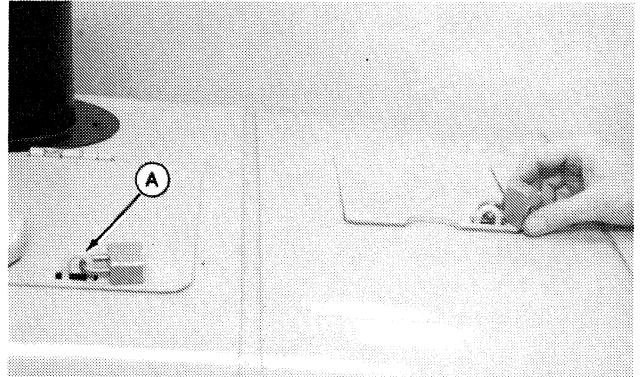


88A;T90448 T82;CRDM K 180383

T83;450D P24 130984

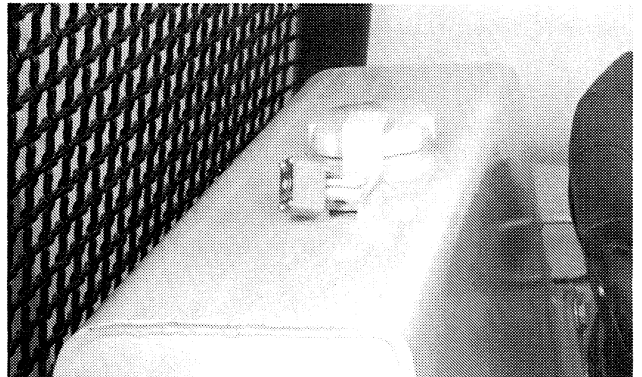


3. To lock the engine service door, install a lock in loop (A).
4. To lock the radiator service door, install a lock in loop.



88A;T90449 T82;CRDM L 180383

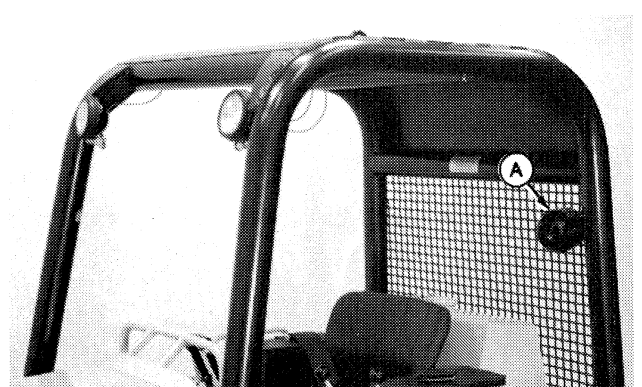
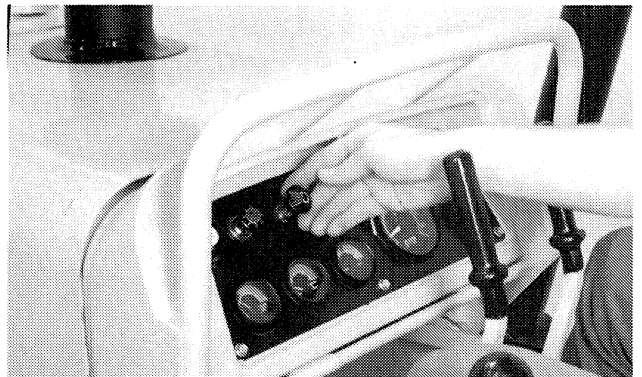
5. To lock fuel cap, install lock through both holes.



88A;T90707 T82;CRDM T 180383

## **OPERATING LIGHTS**

1. Pull knob out to turn on lights.
2. Push knob in to turn off lights.



**A—Rear Work Light**

88A;T90450, T90708 T82;CRDM M 180383

T82;4500 P25 130984

## OPERATING WINDSHIELD WIPER

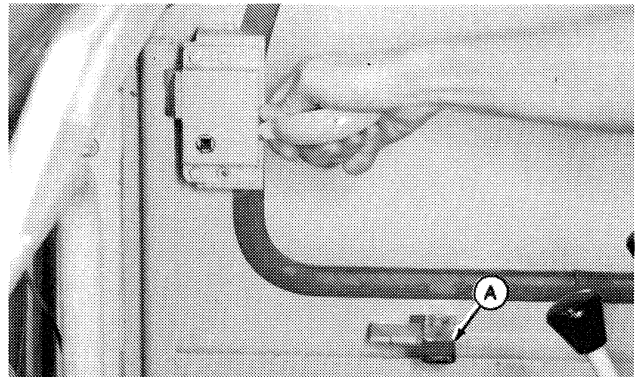
Move switch to ON position to use wiper.



88A;T90451 T82;CRDM N 180383

## OPENING SIDE WINDOW

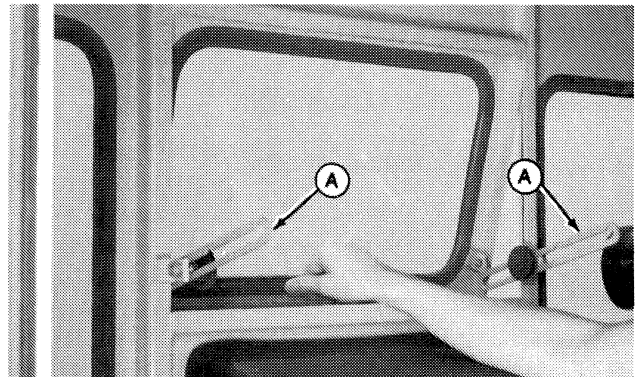
1. Move latch lever down and push window out.
2. Latch (A) holds window in full open position.
3. To close window pull latch lever towards the front of machine and swing window towards the front of machine.



88A;T90452 T82;CRDM O 180383

## OPENING REAR WINDOW

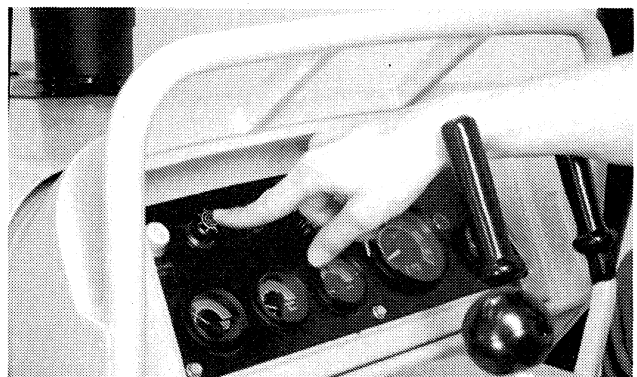
1. Turn both knobs counterclockwise to loosen.
2. Move supports (A) to horizontal position.
3. Push window out to selected position.
4. Turn knobs clockwise to hold window open.



88A;T90453 T82;CRDM P 020383

## OPERATING CIGAR LIGHTER

1. Push lighter into dash to start it heating.
2. The lighter is ready to use when it pops out to normal position.



88A;T90454 T82;CRDM Q 180383

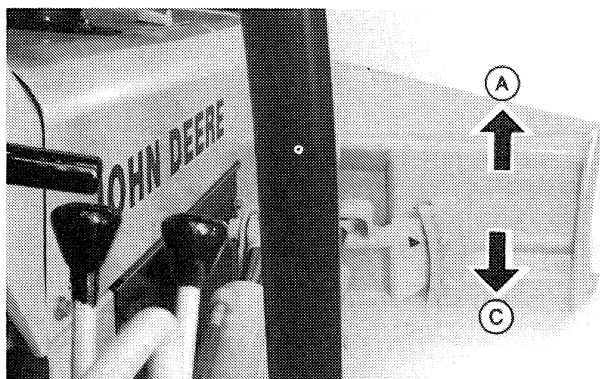
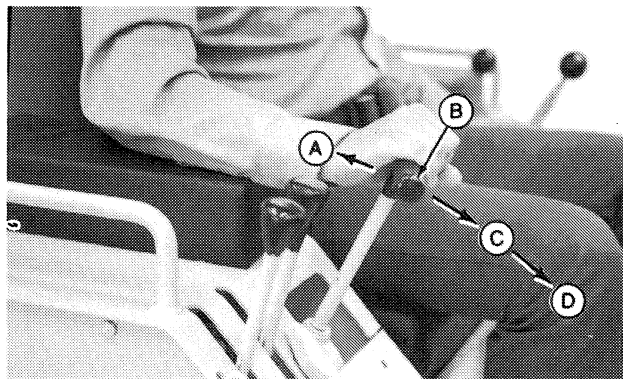


# Operating the Crawler

## OPERATING 6405 BULLDOZER BLADE

**IMPORTANT:** To avoid overheating of hydraulic oil, allow control lever to return to neutral when cylinders reach the end of their travel.

If you move the lever to float position (D), you must move the lever back to neutral (B).



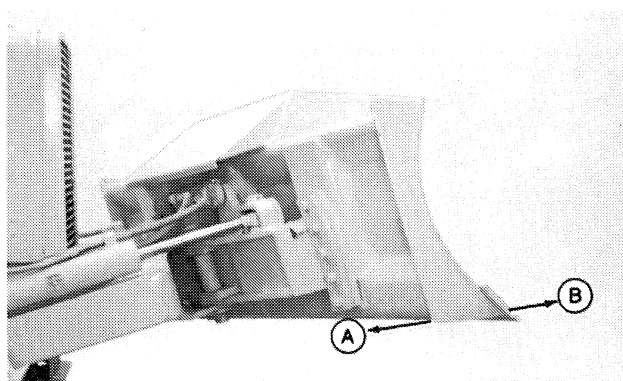
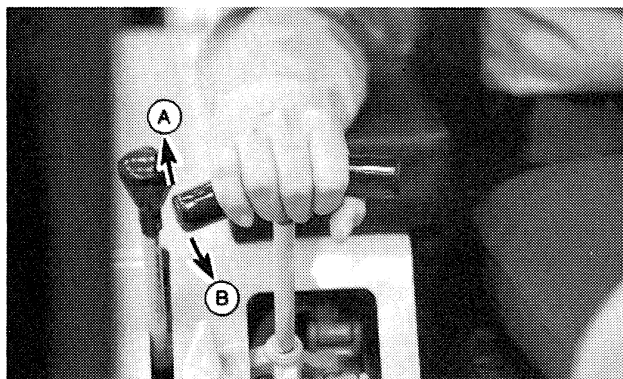
A—Raise  
B—Neutral

C—Lower  
D—Float

88A;T90510, T90511 T82;CROM A 060984

## ANGLING 6405 BLADE

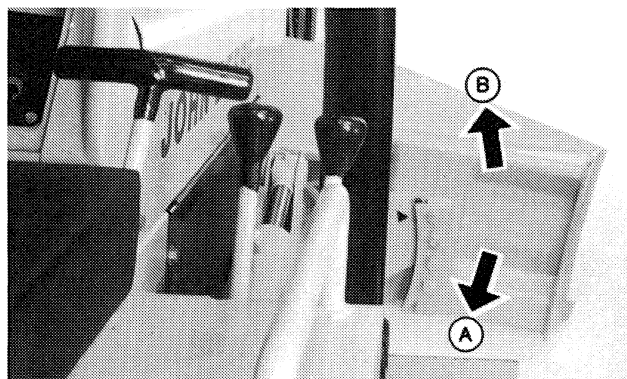
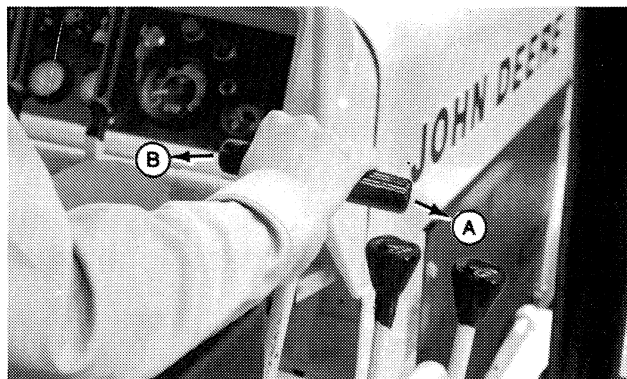
Turn handle clockwise (A) to angle the blade right (A) or counterclockwise (B) to angle the blade left (B).



88A;T90512, T90513 T82;CROM B 130984

## TILTING 6405 BLADE

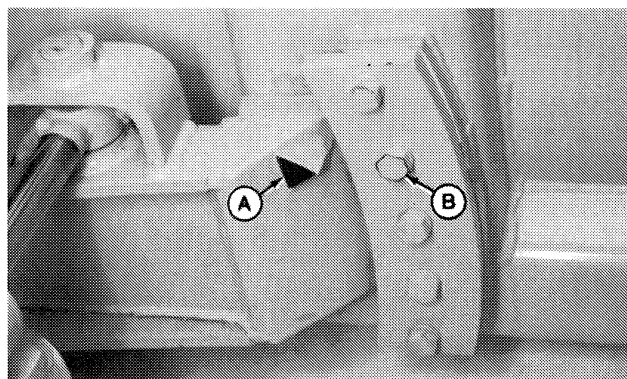
Move lever to the right (A) to tilt the blade to the right (A) or to the left (B) to tilt the blade to the left (B).



88A;T90514, T90515 T82;CROM C 140984

## LEVELING 6405 BLADE

Move control lever until indicator (A) is lined up with second cap screw (B).

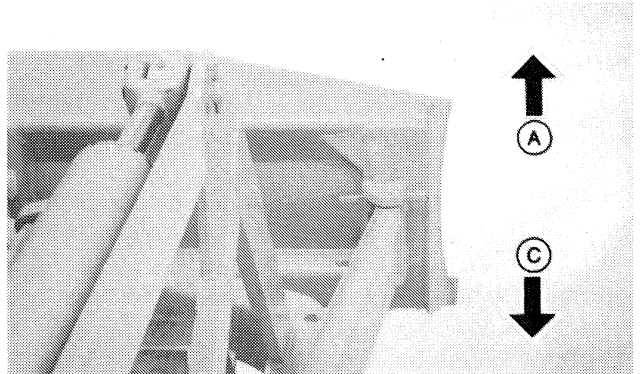
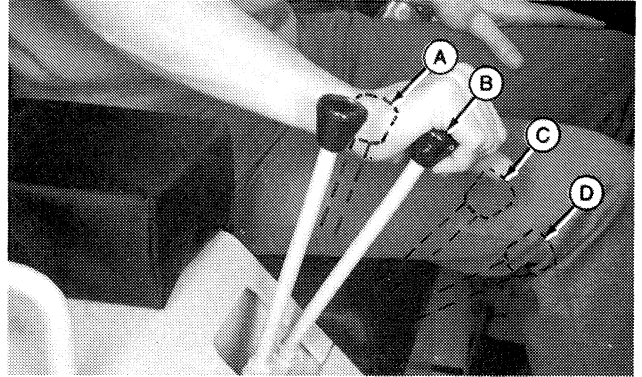


88A;T90516 T82;CROM D 060984

## OPERATING 6410 BULLDOZER BLADE

**IMPORTANT:** To avoid overheating of hydraulic oil, allow control lever to return to neutral when cylinders reach the end of their travel.

If you move the lever to float position (D), you must move the lever back to neutral (B).



A—Raise  
B—Neutral

C—Lower  
D—Float

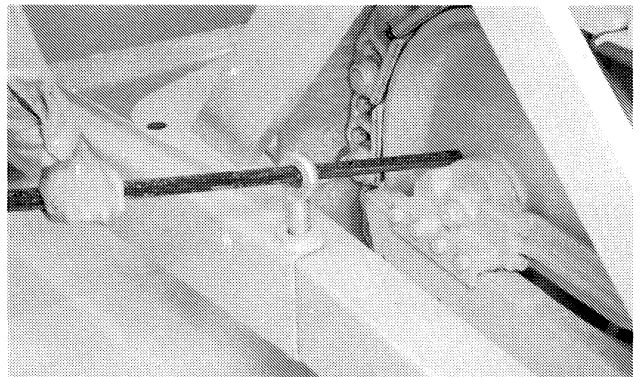
88A;T90517, T90518 T82;CROM E 060984

## TILTING 6410 BLADE

The blade can be tilted when it is straight or angled.

**CAUTION:** DO NOT work under a raised blade unless the whole blade is supported.

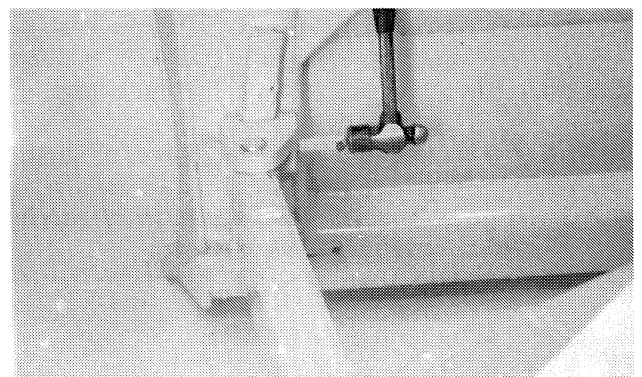
1. Raise the blade and put a block under the C. frame. Lower the blade.
2. Remove pin from each side of machine.



88A;T90522 T82;CROM F 130984

**CAUTION:** When driving pins and wedges, guard against injury from flying piece of metal or debris. Wear goggles or safety glasses, hard hat and gloves.

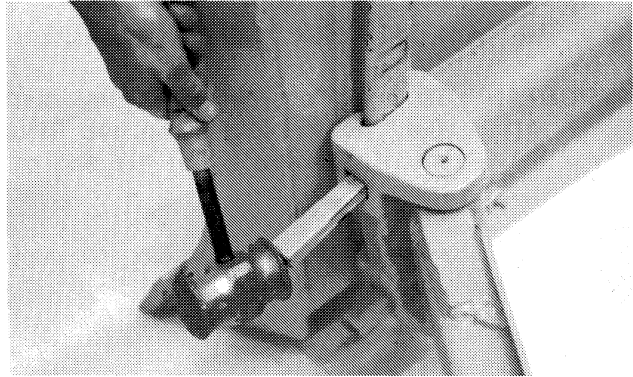
3. DO NOT remove groove pins from wedges. Drive wedges out on one side of blade only.



88A;T90519 T82;CROM G 230383

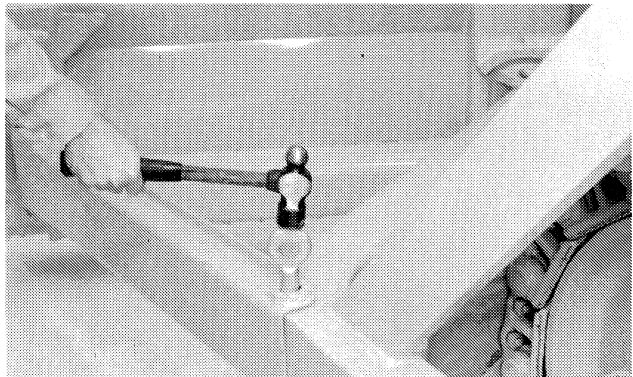
T83;450D P29 080984

4. Slide strut to desired position.
5. Drive wedges in.
6. Install pin through strut and frame.



88A;T90520 T82;CROM T 230383

7. Move to other side of blade.
8. Drive wedges out.
9. Position strut so locking pin can be installed through strut and frame.
10. Install pin.
11. Drive wedge back in.



88A;T90211 T82;CROM U 230383

## LEVELING 6410 BLADE

1. Park crawler on a level surface with the blade raised just off the ground.
2. Loosen wedges on both sides of blade.
3. Remove pins from struts and frame.
4. Lower blade to the ground.
5. Install pins and drive in wedges.

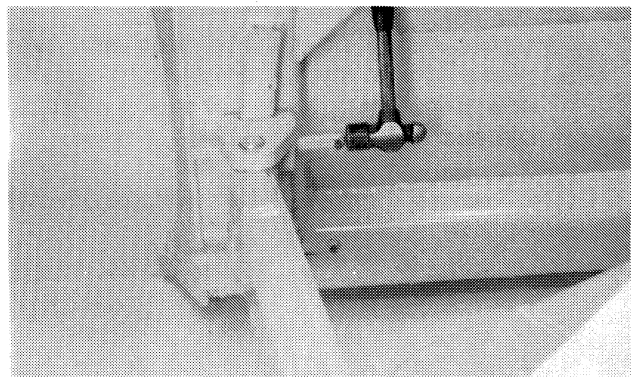
T82;CROM H 060984

## ANGLING 6410 BLADE

The blade can be angled 25° to either the left or the right.

1. Raise the blade 2 to 3 in. (51 to 76 mm) off the ground.

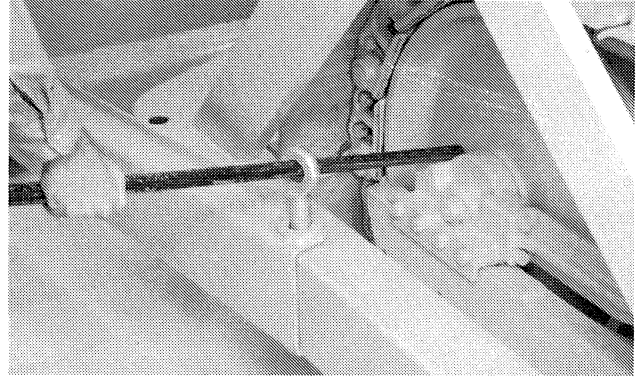
*NOTE: To make removal and installation of angling pins easier, loosen blade-tilt wedges.*



88A;T90519 T82;CROM I 060984

T83;450D P30 080984

2. Remove angling pin from each side of machine.

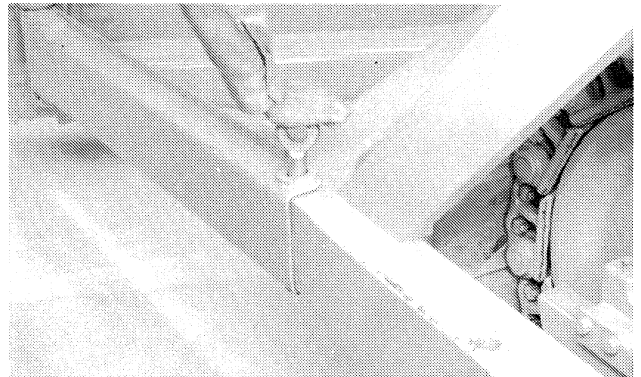


88A;T90522 T82;CROM J 030383

3. To angle the blade to the right, install left pin in forward hole and right pin in rear hole.

4. To angle the blade to the left, install right pin in forward hole and left pin in rear hole.

5. Tighten blade-tilt wedges.

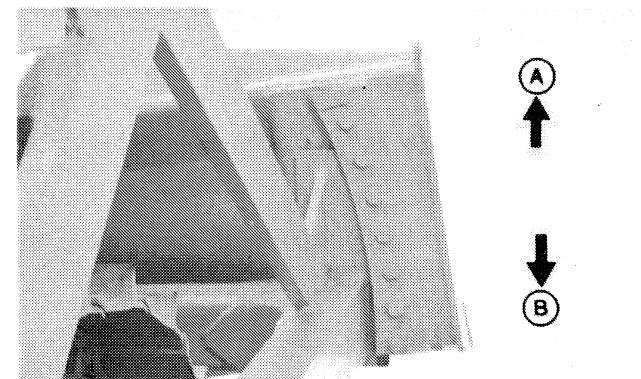
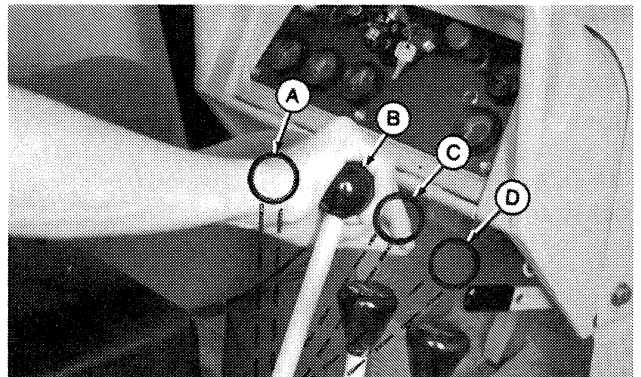


88A;T90523 T82;CROM K 060984

## OPERATING 6415 BULLDOZER BLADE

**IMPORTANT:** To avoid overheating hydraulic oil, allow control lever to return to neutral when cylinders reach the end of their travel.

If you put the blade in float position (D), you must move the lever back to neutral (B).



A—Raise  
B—Neutral

C—Lower  
D—Float

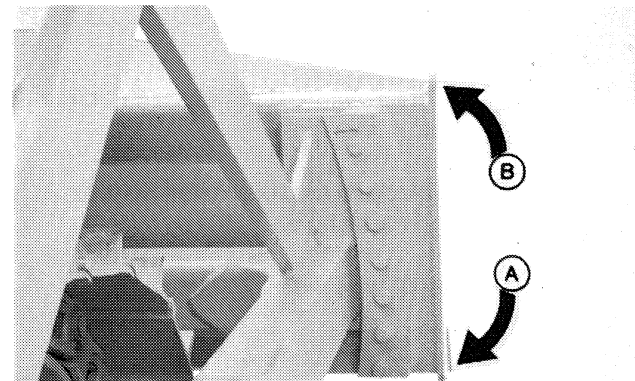
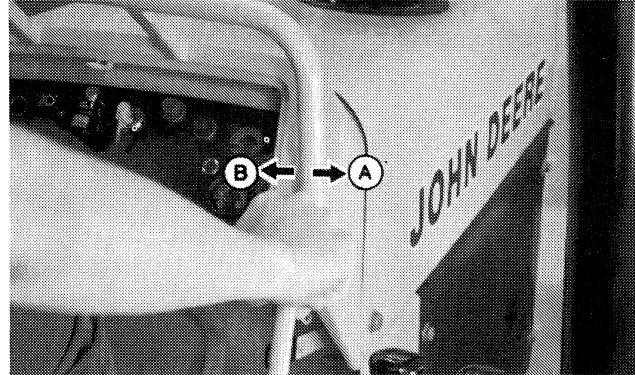
88A;T90524, T90525 T82;CROM L 060984

T83;4500 P31 080984



## TILTING 6415 BLADE

Move the control lever to the right (A) to tilt the blade to the right (A) and to the left (B) to tilt the blade to the left.

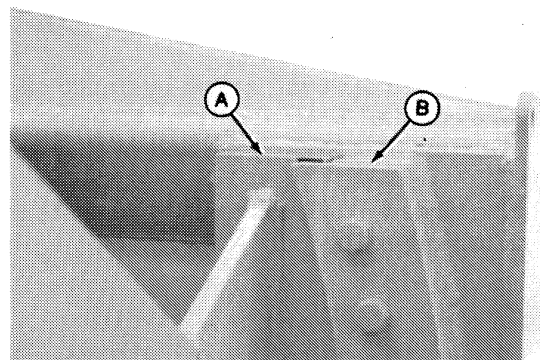


88A/T90526, T90527 T82;CROM M 060984

## LEVELING 6415 BLADE

Align top of dozer frame (A) with top of keeper (B) on either side.

The blade must be level. If not, check dozer frame and blade for worn or loose parts.



88A/T90528 T82;CROM N 060984

## OPERATING SUGGESTIONS

Select the engine RPM and transmission gear to meet your needs.

Consider the ground conditions, operating area, work load and grade desired in making your speed selection.

Know your machine: its capabilities and its limits.

T82;CROM O 080483

T83;450D P32 080984

Angle the blade to:

- fill a trench.
- cut a road through a rough area.
- side cast into a ditch.
- level a grade.

T82;CROM R 060984

Tilt the blade to:

- cut into a hillside.
- crown a road.
- make a narrow cut or shallow ditch.
- rough grade.
- dig rocks or stumps.

T82;CROM S 130984

Use float position to:

- backdrag (transmission in reverse)
- push material over a hard surface.

In float position, the blade will follow the contour of the ground.

T82;CROM AB 130984

# Attachments

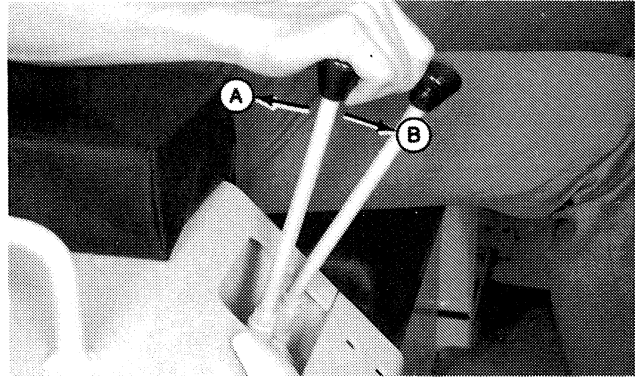
## OPERATING RIPPER

**IMPORTANT:** To avoid overheating of hydraulic oil, allow control lever to return to neutral when cylinders reach the end of their travel.

When you are not using ripper, move it to fully raised position.

A—Raise

B—Lower



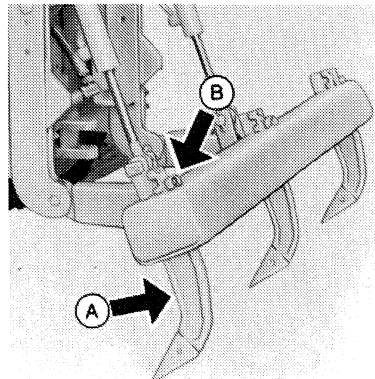
88A/T90669 T82/CRAT A 290884

1. To adjust ripper teeth for depth of penetration, remove shank lock (B).

2. Move shank (A) to desired depth.

**NOTE:** Three notches on shank are for three depths of penetration: 7 in. (189 mm), 8-½ in. (216 mm), and 10 in. (254 mm).

3. Install shank lock.



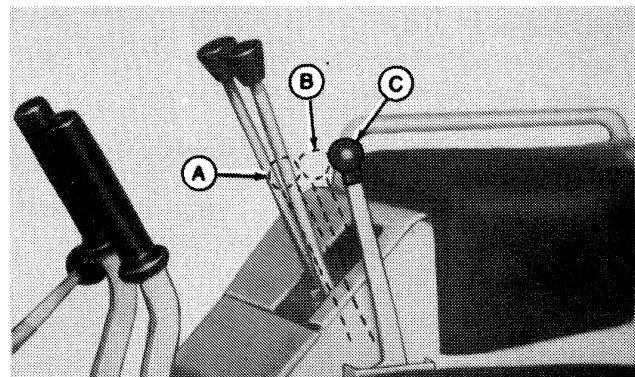
## OPERATING WINCH

1. Set speed control at 1500 to 2500 rpm.

**CAUTION:** DO NOT work under a load held by the winch cable.

2. Wind up cable, move control lever to position (A). When you release lever, it will return to HOLD (B) position.

3. To unwind cable, move lever to position (C).



88A/T60149 T82/CRAT B 230383

88A/T90670 T82/CRAT C 080483

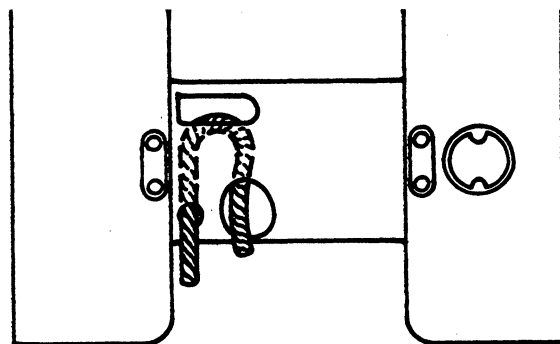
4. Connect cable to winch drum as shown.

Always wear gloves when handling cable.

Keep cable clamps tight.

Replace badly worn or frayed cables.

**CAUTION:** DO NOT guide cable onto drum with your hands.



88A/T90671 T82/CRAT D 260483

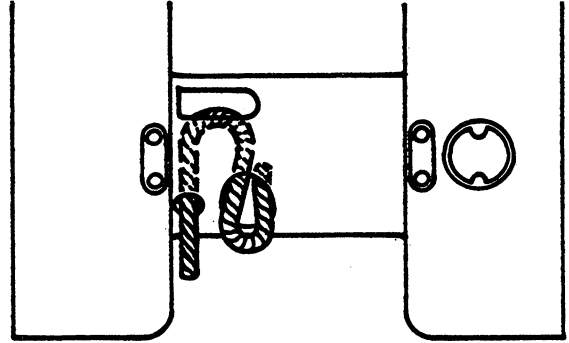
T83/4500 P34 080984





**CAUTION:** When cable is fastened as shown, it will separate from the drum if you unwind cable below five turns on drum.

Some state laws require cable to be fastened to drum as shown to allow cable to separate from drum when fully unwound.

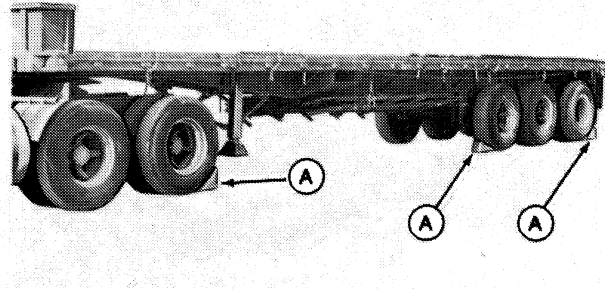


88A/T90672 T82/CRAT E 290884

# Transporting

## LOADING MACHINE ON A TRAILER

1. Keep the trailer bed clean.
2. Put chock blocks (A) against truck wheels.
3. Use a ramp or loading dock. Ramps must be strong enough, have a low angle, and correct height.
4. Load and unload the backhoe loader on a level surface.
5. Drive the backhoe loader onto the ramps squarely.
6. The centerline of the backhoe loader should be over the centerline of the trailer.
7. Stop the engine.
8. Remove the key.
9. Move gear shift lever to neutral.
10. Lock H-L-R lever in neutral.
11. Engage brake lock.
12. Lower all equipment onto blocks.



88A;T87155 T82;BHTR A 121083

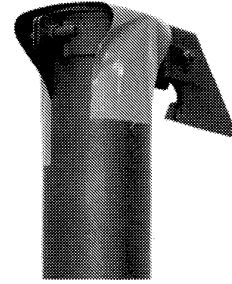
13. To release hydraulic pressure, move control lever until equipment does not move.



88A;T90431 T82;CRTR B 280283

14. Fasten the exhaust cover closed.
15. Fasten each corner of the machine to the trailer with a chain or cable.
16. Put blocks in front of and behind tracks.

**IMPORTANT:** Fasten chains or cables to dozer frame or track chain links, NOT to other places on the crawler.



88A/T86928 T82/CRTR C 280283

## TOWING



**CAUTION:** DO NOT attempt to start the machine by towing. Extensive machine damage and/or personal injury may result.

Fasten a tow bar or chain to the crawler frame, drawbar, or low hook.

**IMPORTANT:** DO NOT tow the crawler faster than 5 mph (8.1 km/h).

**NOTE:** Before towing:

1. Put transmission shift lever in neutral.
2. Put HLR lever in neutral position and lock.
3. Disengage park brake.



88A/T90432 T82/CRTR D 080483

## SHIPPING SPECIFICATIONS:

|         | 6405 Bulldozer*          | 6410 Bulldozer**          | 6415 Bulldozer**          | Tractor less dozer*    |
|---------|--------------------------|---------------------------|---------------------------|------------------------|
| Length: | 11 ft 10 in. (3.61 m)*** | 12 ft 4.5 in. (3.77 m)*** | 11 ft 5 in. (3.48 in.)*** | 9 ft 1 in. (2.92 m)*** |
| Width:  | 90 in. (2.29 m)          | 106 in. (2.69 m)          | 96 in. (2.44 m)           | 68 in. (1.73 m)        |
| Height: | 8 ft 7.7 in. (2.63 m)    | 8 ft 7.7 in. (2.63 m)     | 8 ft 7.7 in. (2.63 m)     | 8 ft 7.7 in. (2.63 m)  |
| Weight: | 14,300 lb (6 480 kg)     | 14,370 lb (6 515 kg)      | 14,780 lb (6 700 kg)      | 11,910 lb (5 400 kg)   |

\*Includes 16 in. (406 mm) grouser shoes

\*\*Includes 18 in. (457 mm) grouser shoes

\*\*\*Add 6 in. if equipped with drawbar

T82/CRTR E 130984

# Fuels and Lubricants

## FUEL SPECIFICATIONS

Use **ONLY** clean, high-quality fuel.

Use Grade No. 2-D fuel above 40°F (4°C).

Use Grade No. 1-D fuel at temperatures below 40°F (4°C).

Use Grade No. 1-D fuel for all air temperatures at altitudes above 5000 ft (1 500 m).

**IMPORTANT:** If fuel sulfur content exceeds 0.5 per cent, the engine oil drain interval must be reduced by 50 per cent (to 100 hours).

Use fuel with less than 1.0 per cent sulfur. If possible, use fuel with less than 0.5 per cent sulfur.

For maximum filter life, sediment and water should not be more than 0.10 per cent.

The cetane number should be 40 minimum. If you operate your machine where air temperatures are normally low or where altitudes are high, you may need fuel with a higher cetane number.

Cloud Point—For cold weather operation, cloud point should be 10°F (6°C) below lowest normal air temperature.

T82;BHFL F 190784

## FUEL STORAGE

*NOTE: Diesel fuels stored for a long time may form gum and plug filters.*

Keep fuel in a clean container in a protected area. Water and sediment must be removed before fuel gets to the engine. Do not use de-icers to remove water from fuel. Do not depend on fuel filters to remove water.

If possible, install a water separator at the storage tank outlet. See your John Deere dealer for this part.

**IMPORTANT:** Keep all dirt, scale, water or other foreign material out of fuel.

Store fuel drums on their sides with plug up.

T82;BHFL G 180584

## FUEL TANK



**CAUTION:** Handle fuel carefully. If the engine is hot or running, do not fill the fuel tank. Do not smoke while you fill fuel tank or work on fuel system.

To avoid condensation, fill the fuel tank at the end of each day's operation.

T82:BHFL H 130684

## ENGINE OIL

| AIR TEMPERATURE RANGE |     |     |     |     |            |          |           |        |        |     |     |
|-----------------------|-----|-----|-----|-----|------------|----------|-----------|--------|--------|-----|-----|
| Fahrenheit (F)        | -67 | -40 | -22 | -4  | 14         | 32       | 50        | 68     | 86     | 104 | 122 |
| Celsius (C)           | -55 | -40 | -30 | -20 | -10        | 0        | 10        | 20     | 30     | 40  | 50  |
|                       |     |     |     |     |            |          |           |        | SAE 40 |     |     |
|                       |     |     |     |     |            |          |           | SAE 30 |        |     |     |
|                       |     |     |     |     |            |          | SAE 15W40 |        |        |     |     |
|                       |     |     |     |     |            |          | SAE 15W30 |        |        |     |     |
|                       |     |     |     |     |            | SAE 10W  |           |        |        |     |     |
|                       |     |     |     |     |            | SAE 5W30 |           |        |        |     |     |
|                       |     |     |     |     |            | SAE 5W20 |           |        |        |     |     |
|                       |     |     |     |     | ARCTIC OIL |          |           |        |        |     |     |

Depending upon the expected air temperature range between oil changes, use oil viscosity shown on the temperature chart above.

Additives are not required nor recommended.

John Deere TORQ-GARD SUPREME® engine oil is recommended. If other oils are used, they must have the following minimum specifications:

### Oil Specification

API Service CD/SC  
(MIL-L-2104C)

API Service CC/SC\*  
or MIL-L-46152\*

MIL-L-46167\*

### Use

Recommended.

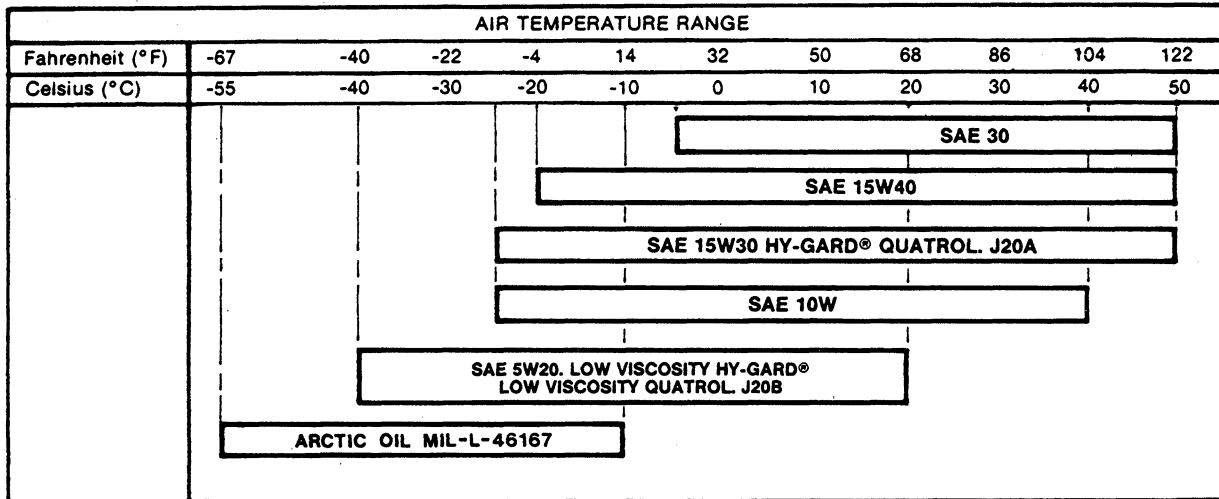
For SAE 5W20, SAE 5W30 and arctic oil only, use if recommended oil is not available.

For arctic oil only.

\*Change oil at 100 hours, which is half the normal drain interval.

88A;T91372 T82;CRFL E 270483

T83;4500 P39 080984

**TRANSMISSION—STEERING CLUTCHES AND HYDRAULIC SYSTEM OIL**

Depending upon the expected air temperature range between oil changes, use oil viscosity shown on the temperature chart above.

The following oils are recommended:

John Deere HY-GARD® Transmission and Hydraulic Oils.

Engine oil meeting API Service CD/SC (MIL-L-2104C), CC/SC, or MIL-L-46152 and T02 oil test.

You may also use QUATROL® oils, which are oils that meet John Deere standards, or other oils meeting John Deere Standard J20A or J20B.

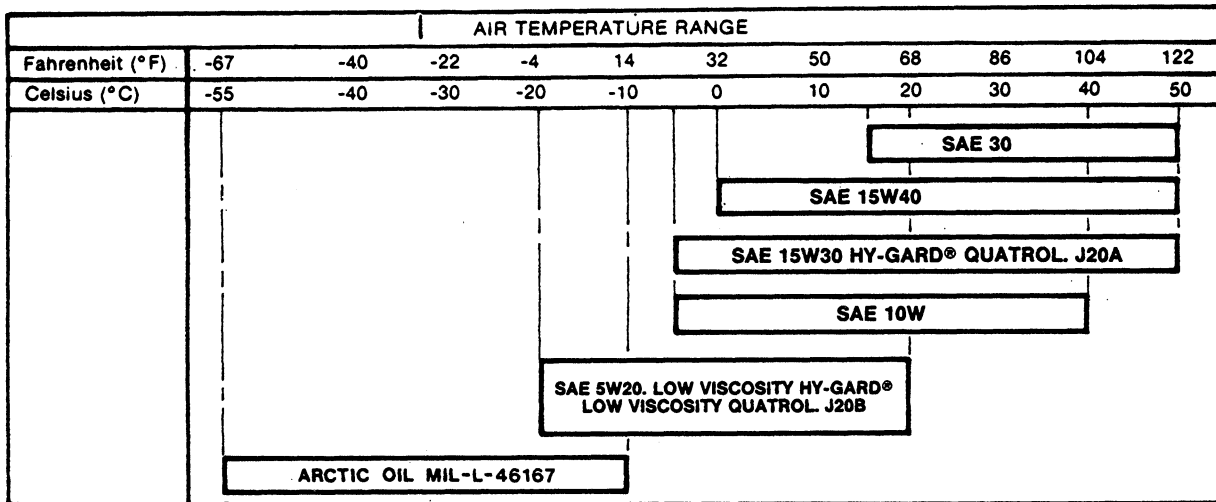
Oil meeting MIL-L-46167 may be used as an arctic oil.

88A:T5935AX T82:CRFL M 290884





## WINCH OIL



Depending upon the expected air temperature range between oil changes, use oil viscosity shown on the temperature chart above.

The following oils are recommended:

John Deere HY-GARD® Transmission and Hydraulic Oils.

Engine oil meeting API Service CD/SC (MIL-L-2104C), CC/SC, or MIL-L-46152 and T02 oil test.

You may also use QUATROL® oils, which are oils that meet John Deere standards, or other oils meeting John Deere Standard J20A or J20B.

Oil meeting MIL-H-5606A may be used as an arctic oil.

88A/T5935AZ T82/CRFL O 130984

## TRACK ROLLER, FRONT IDLER, AND CARRIER ROLLER OIL

Use SAE 80W90 gear oil meeting API Service GL-5 (MIL-L-2105B or MIL-L-2105C).

T82/CRFL D 080483

T83/450D P42 080984



## **ALTERNATIVE FUELS AND LUBRICANTS**

Conditions in certain geographical areas may require special fuels and/or lubricants which do not appear in this manual. If you have any questions, consult your John Deere dealer.

T82;BHFL I 020383

## **LUBRICANT STORAGE**

Your machine can operate at top efficiency only if clean lubricants are used. Use clean containers to handle all lubricants. Store them in an area protected from dust, moisture, and other contamination. Store drums on their sides.

T82;BHFL J 080483

# Periodic Maintenance

## SERVICE YOUR MACHINE AT SPECIFIED INTERVALS

Lubricate, make service checks and adjustments at intervals shown on the periodic maintenance chart and on the following pages.

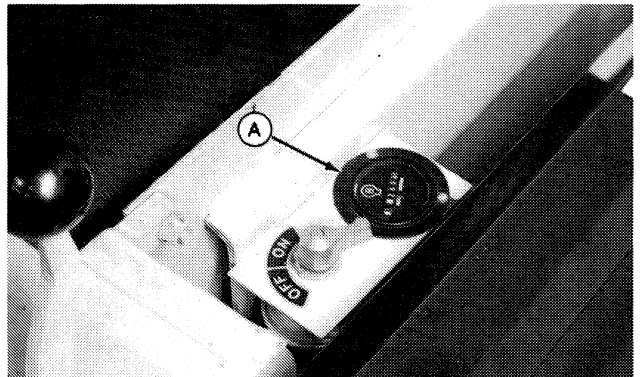


88A;T90560 T82;CRPM A 040383

## CHECK THE HOUR METER REGULARLY

Use the hour meter (A) to determine when your machine needs periodic maintenance.

Intervals on the periodic maintenance chart are for operating in normal conditions. If you operate your machine in difficult conditions, you should service it at SHORTER INTERVALS.



88A;T90401 T82;CRPM B 230383

## USE CORRECT FUELS AND LUBRICANTS

**IMPORTANT:** Refer to the Fuels and Lubricants Chapter when performing maintenance on your machine.

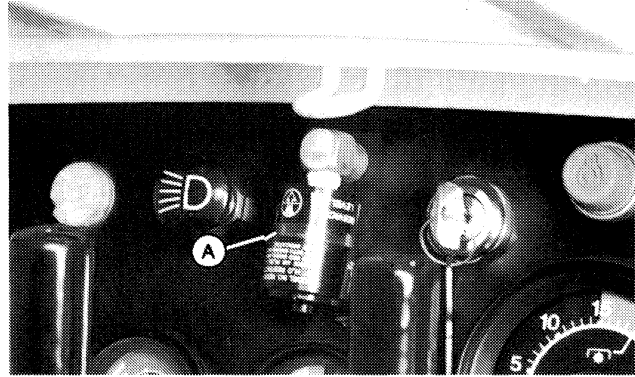
T82;EXPM EA 290884

# Periodic Maintenance/As Required

## CHECK AIR RESTRICTION INDICATOR

The red signal must not be visible in restriction indicator (A).

If red signal is visible, clean or replace air filter elements.  
(See Service Air Filter Elements in Maintenance chapter).

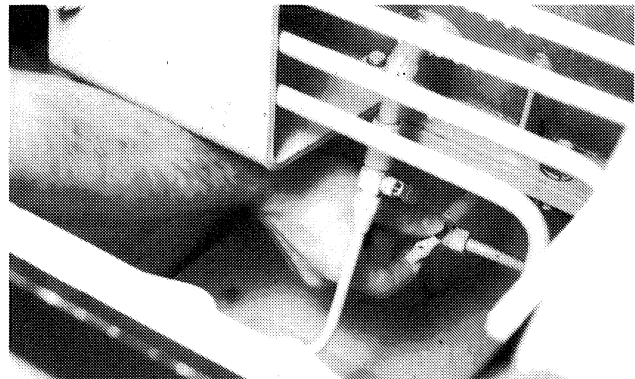


88A;T90564 T82;CRPM E 290884

## DRAIN FUEL TANK SUMP

To drain sump:

1. Remove seat cushion.
2. Open drain cock for several seconds to drain water and sediment.
3. Close drain cock finger tight.
4. Install seat cushion.

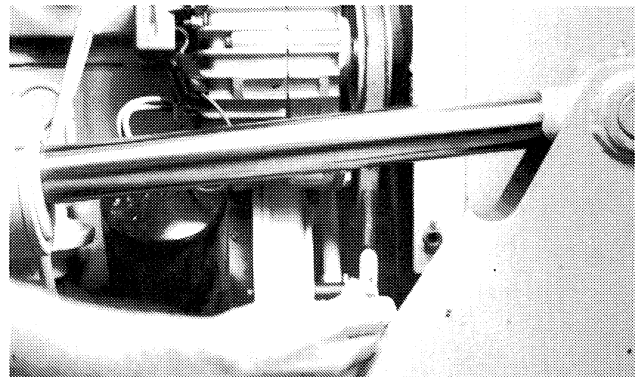


88A;T90565 T82;CRPM F 290884

## CHECK BELT TENSION

A force of 20 lb (90 N) on the belt halfway between pulleys should move the belt 3/4 in. (19 mm).

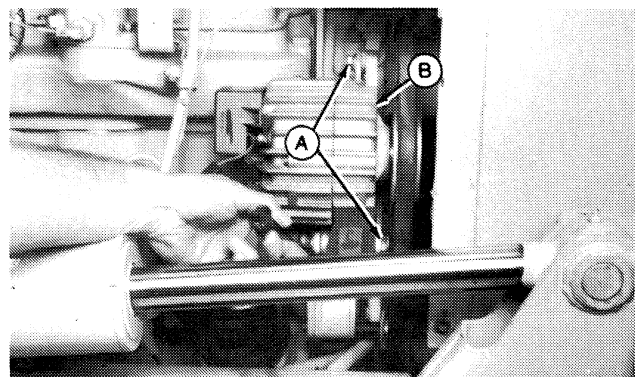
*NOTE: Belt should be checked regularly for wear. Replace if necessary.*



88A;T90566 T82;CRPM G 070984

## ADJUST BELT TENSION

1. Loosen cap screws (A).
2. Apply force to FRONT of alternator housing (B) only until tension is correct.
3. Tighten cap screws.

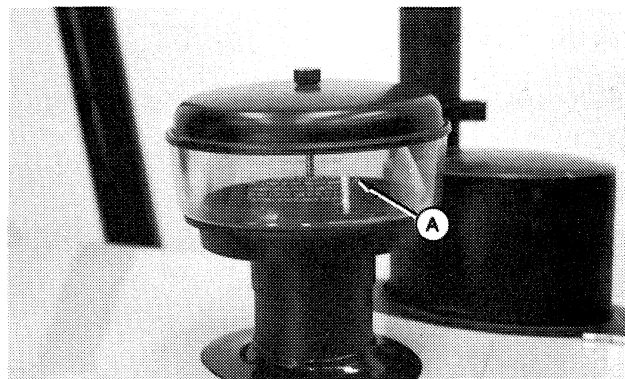


88A;T90567 T82;CRPM H 230383

## CHECK THE PRE-CLEANER

Check the pre-cleaner bowl. If dust or other material is up to the mark (A) on the bowl, clean the bowl.

**IMPORTANT:** The pre-cleaner removes only part of the dirt as air goes to the engine. You must still clean the air cleaner regularly.



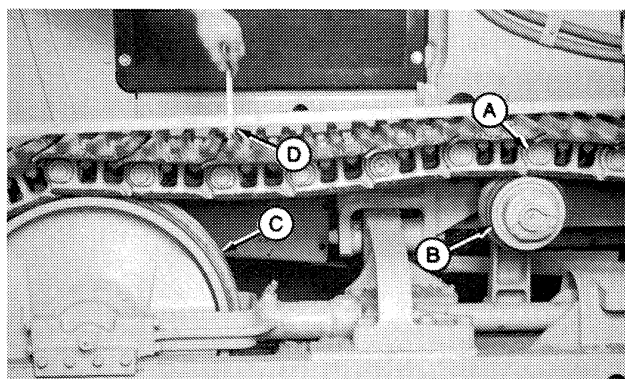
88A/T90568 T82/CRPM I 290884

## CHECK TRACK SAG

Position track so that a track pin (A) is centered over the carrier roller (B).

Measure sag in center of track between carrier roller and front idler (C). Sag should be 7/8 to 1-1/8 inches (22 to 28.5 mm).

If adjustment is needed, see Adjusting Track Sag in Maintenance chapter.



A—Pin and Bushing  
B—Carrier Roller

C—Front Idler  
D—7/8 to 1-1/8 in. (22 to 28.5 mm)

88A/T90569 T82/CRPM J 070984

## CHECK CLUTCH PEDAL FREE TRAVEL

Horizontal free travel must be  $4 \pm 1/8$  inches from the top of the clutch pedal pad as measured from the top of the seat panel.

If free travel is not correct, see your John Deere dealer for adjustment.

T82/CRPM GW 130984

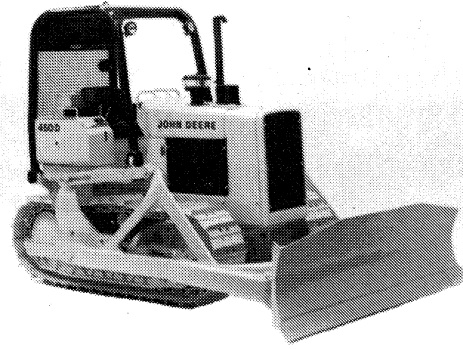
T83/450D P47 130984

# Periodic Maintenance/Daily or Every 10 Hours

## CHECK HYDRAULIC SYSTEM OIL LEVEL

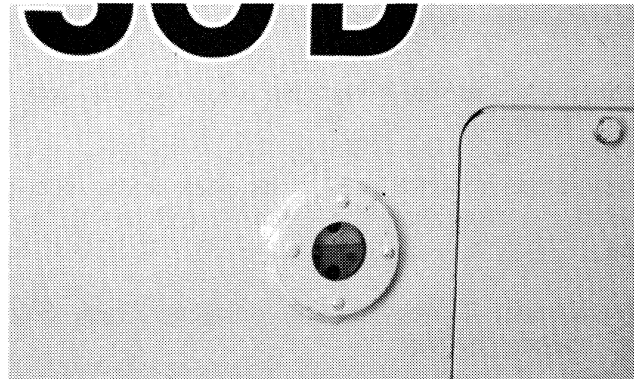
**IMPORTANT: DO NOT** operate machine without oil in reservoir.

1. Park machine on level surface.
2. Lower all equipment to ground.
3. Turn key switch to OFF.



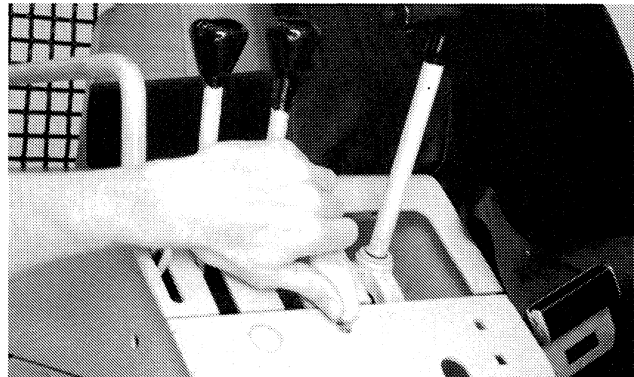
88A;T90550 T82;CRPM L 070984

4. Oil level must be halfway up in oil level window.
5. If necessary, add oil specified in Fuels and Lubricants chapter.



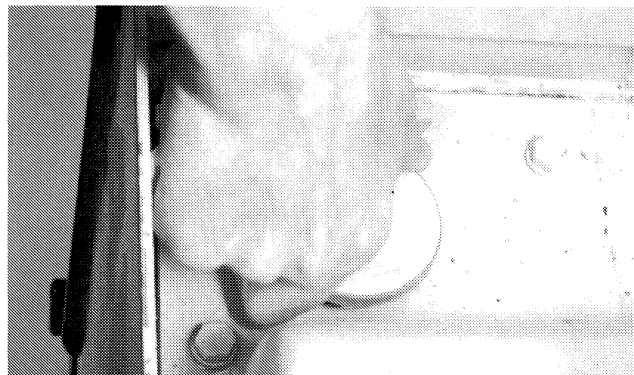
88A;T90550 T82;CRPM M 040383

6. To add oil, turn latch and open reservoir cover.



88A;T90551 T82;CRPM N 230383

7. SLOWLY turn pressure cap. Release any pressure before removing it.
8. Check gasket on cap.
9. Install pressure cap tightly.



88A;T90552 T82;CRPM O 230383

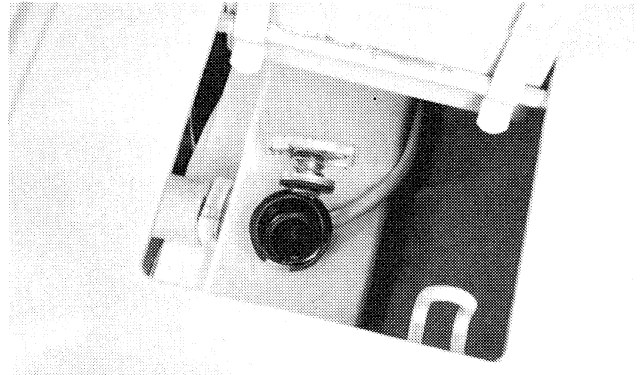


## CHECK COOLANT LEVEL



**CAUTION: DO NOT** remove radiator cap unless engine is cool. Loosen cap slowly to the stop. Release all pressure in cooling system before you remove cap.

1. Coolant level must be halfway between radiator core and filler neck. Do not overfill.
2. Tighten the cap.

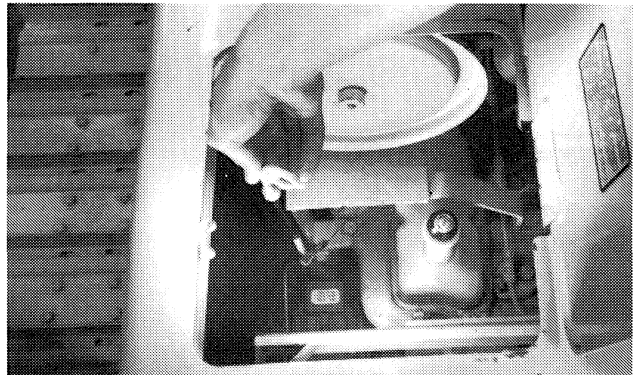


88A;T90553 T82;CRPM P 130984

## CHECK ENGINE OIL LEVEL

1. Park machine on level surface.
2. Open hood door.
3. After engine has been shut off 10 minutes, remove dipstick to check oil level. Oil must be between marks on dipstick.

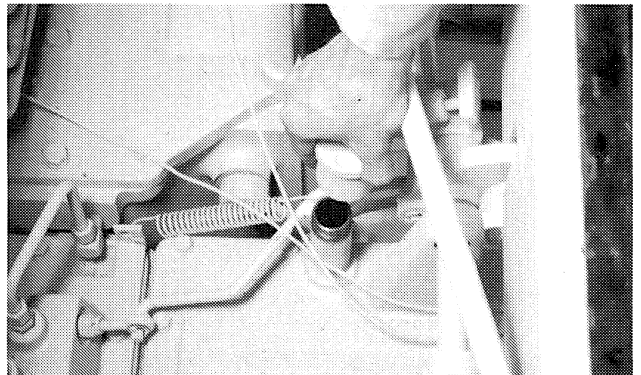
If necessary add oil specified in Fuels and Lubricants chapter.



88A;T90554 T82;CRPM Q 130984

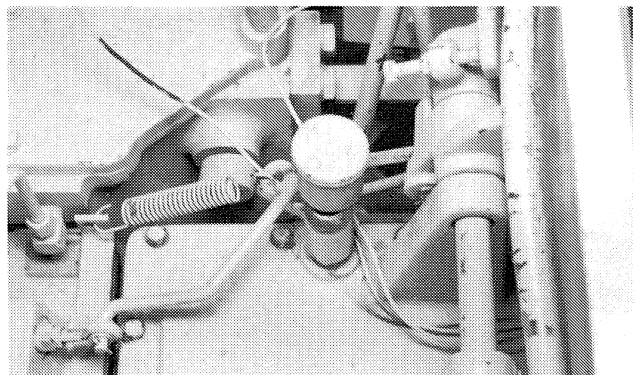
## CHECK TRANSMISSION—STEERING CLUTCH OIL LEVEL

1. Machine must be on level surface. Check oil level before starting the engine.
2. Remove seat cushion.
3. Remove dipstick and wipe oil from it.



88A;T90555 T82;CRPM R 130984

4. To get accurate reading of oil level, set bottom of threaded cap on top edge of filler tube as shown.
5. Oil level must be within 0.12 in. (3 mm) of full mark on dipstick.
6. If necessary, add oil specified in Fuels and Lubricants chapter.
7. Tighten cap in filler tube.



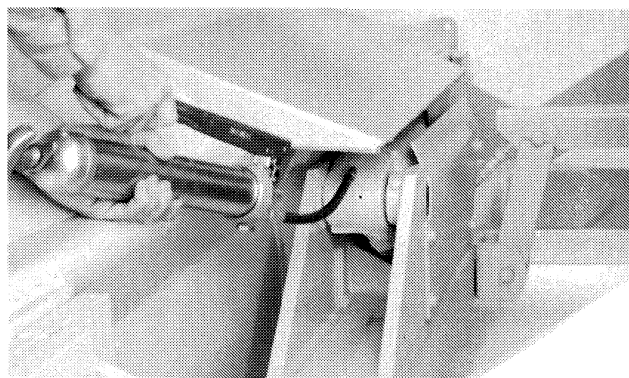
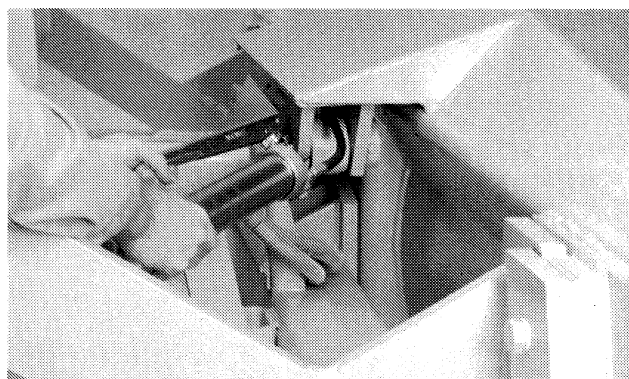
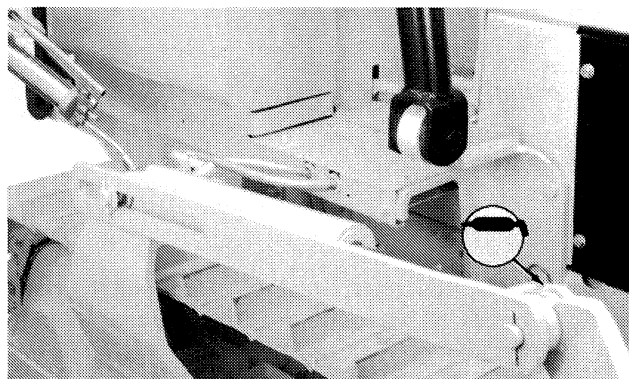
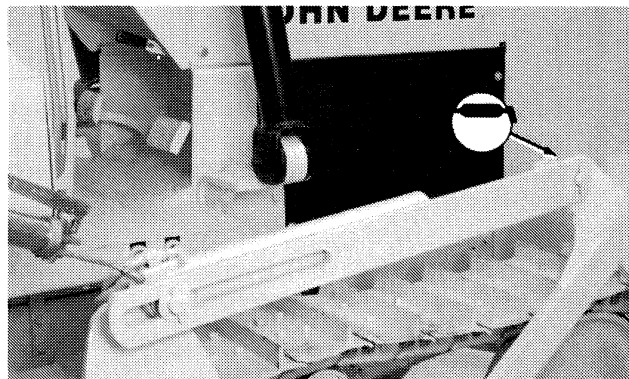
88A;T90556 T82;CRPM S 130984

T83;450D P49 130984

## LUBRICATE 6405 BULLDOZER PIVOT POINTS

There is a total of eight pivot points.

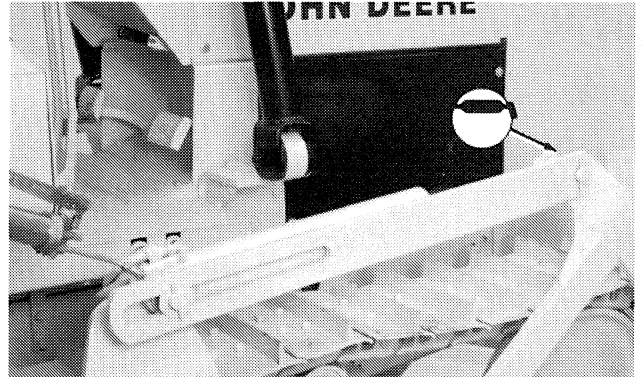
Lubricate with grease specified in Fuels and Lubricants chapter until grease escapes from joints.



## LUBRICATE 6410 BULLDOZER PIVOT POINTS

There is a total of four pivot points.

Lubricate with grease specified in Fuels and Lubricants chapter until grease escapes from joints.

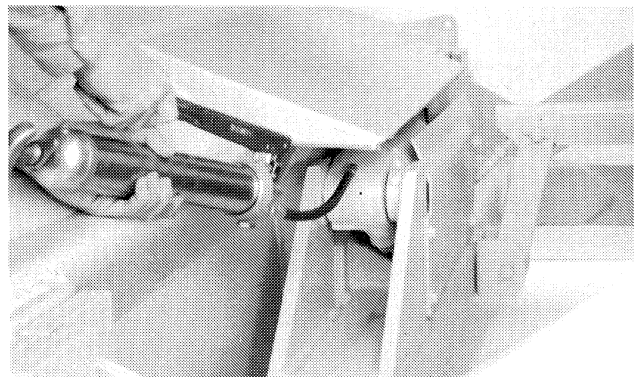
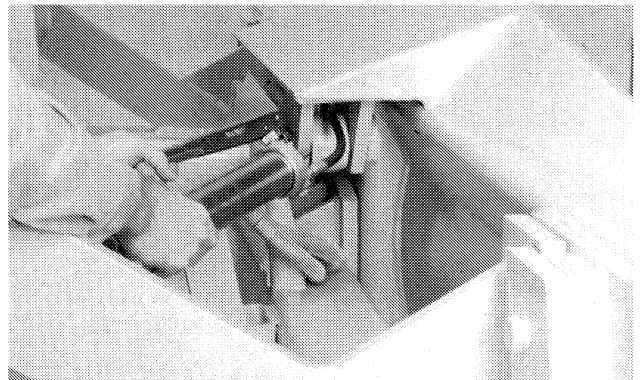
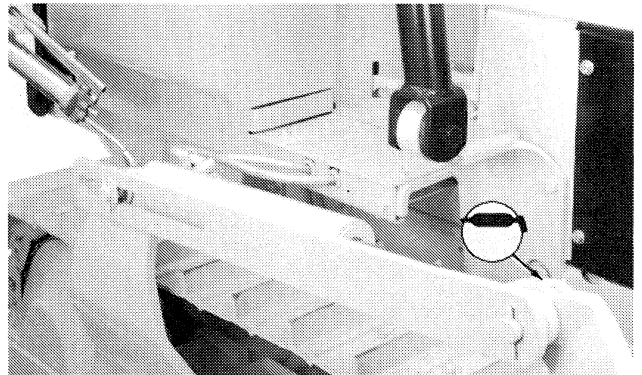


88A;T90558 T82;CRPM U 230383

## LUBRICATE 6415 BULLDOZER PIVOT POINTS

There is a total of six pivot points.

Lubricate with grease specified in Fuels and Lubricants chapter until grease escapes from joints.



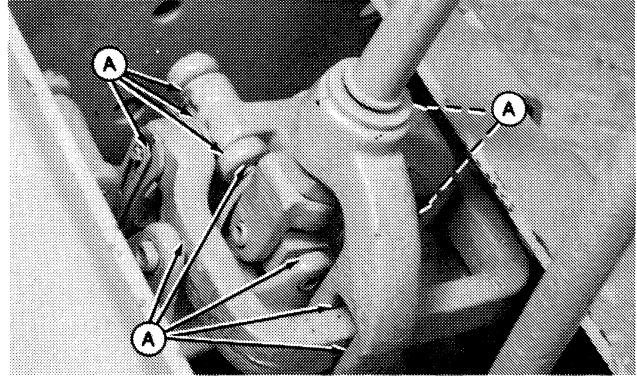
88A;T90559,T90728, T90729 T82;CRPM V 070984

T83;4500 P51 100984

# Periodic Maintenance/200 Hours

## OIL BULLDOZER CONTROL LEVER

1. Turn latch and lift reservoir cover.
2. Lubricate lever pivots with engine oil.



88A;T90571 T82;CRPM W 070984

## CHECK BATTERY ELECTROLYTE LEVEL AND TERMINALS

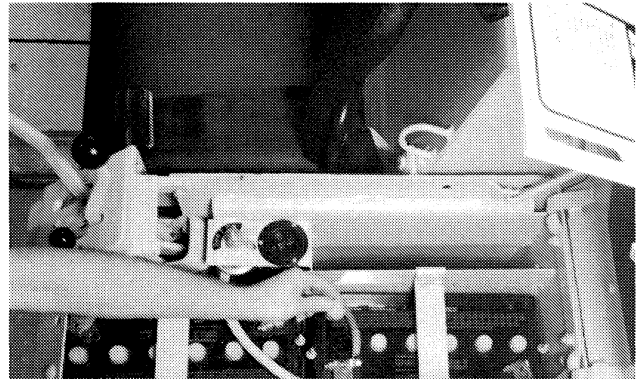


**CAUTION: Battery gas can explode. Keep sparks and flames away from batteries.**

1. Turn latch and lift battery compartment cover into lock position.
2. Remove tool tray and supporting board.
3. Fill each cell to bottom of filler neck with distilled water.

**IMPORTANT: Add water to batteries in freezing weather before you begin operating your crawler for the day, or else charge the batteries after filling.**

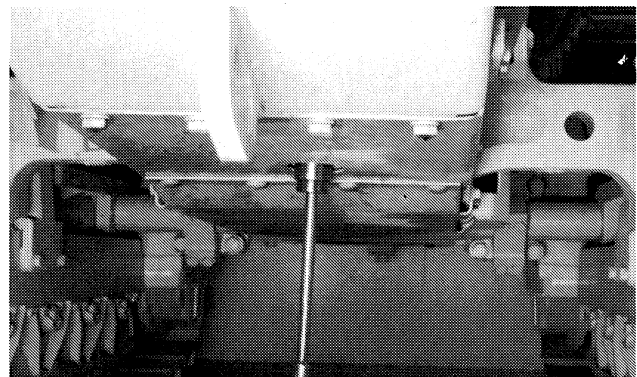
4. Clean terminals with a stiff brush.
5. Tighten cable clamps and ground connection.
6. Coat terminals and clamps with petroleum jelly.



88A;T90573 T82;CRPM Y 300884

## CHANGE ENGINE OIL

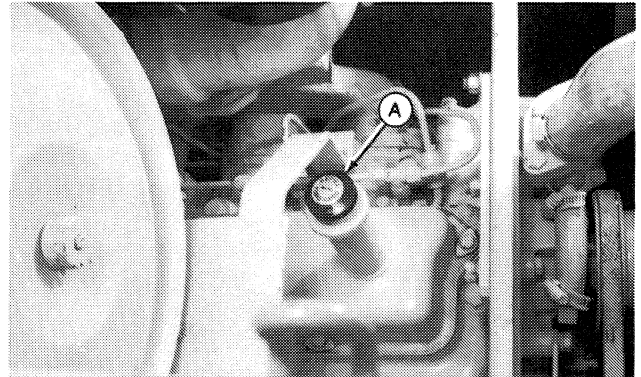
1. Run engine to warm oil. Stop the engine.
2. Remove drain plug. While oil drains, change engine oil filter.
3. Install drain plug.



88A;T90574 T82;CRPM Z 300884

4. Remove fill cap (A).
5. Fill engine with oil. (See Fuels and Lubricants chapter.) Capacity is 9 qt (8.5 L) with filter change.
6. Run engine. Check for leaks around drain plug.
7. Stop engine. Check oil level.

**IMPORTANT:** If fuel sulfur content exceeds 0.5 percent, the engine oil drain interval must be reduced by 50 percent (to 100 hours).

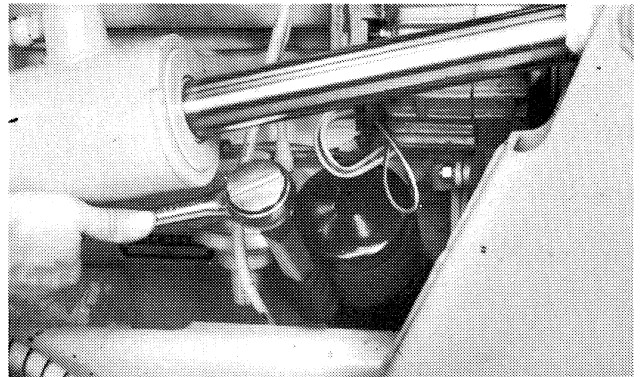


88A;T90575 T82;CRPM AA 130984

## CHANGE ENGINE OIL FILTER

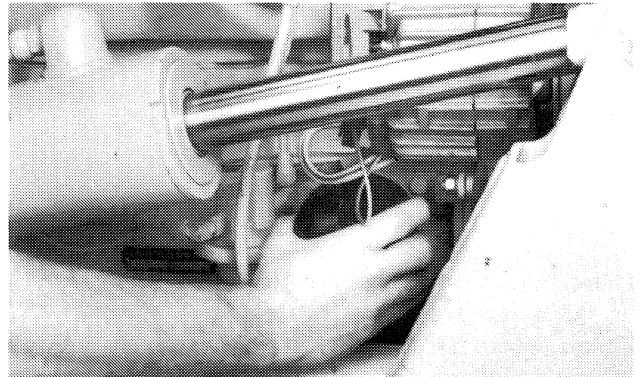
*NOTE: Change engine oil filter while engine oil is draining.*

1. Remove filter: turn it counterclockwise.
2. Apply thin film of oil to gasket of new filter.



88A;T90576 T82;CRPM AB 070984

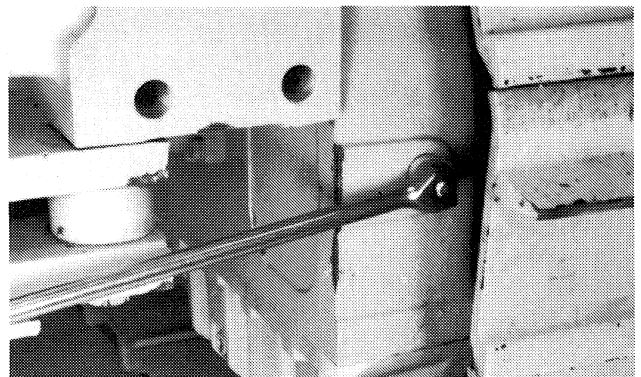
3. Install new filter. Turn filter clockwise by hand until gasket touches mounting surface.
4. Tighten 1/2 to 3/4 turn more.
5. Start engine. Check for leaks around filter. Tighten filter only enough to stop leaks.
6. Stop engine. Check oil level.



88A;T90577 T82;CRPM AC 040383

## CHECK FINAL DRIVES OIL LEVEL

1. Park crawler on a level surface.
2. Remove oil level and filler plug. Oil should be to the bottom of the filler hole.
3. If oil is needed, add oil. (See Fuels and Lubricants chapter.)
4. Install plug.



88A;T90578 T82;CRPM AD 070984



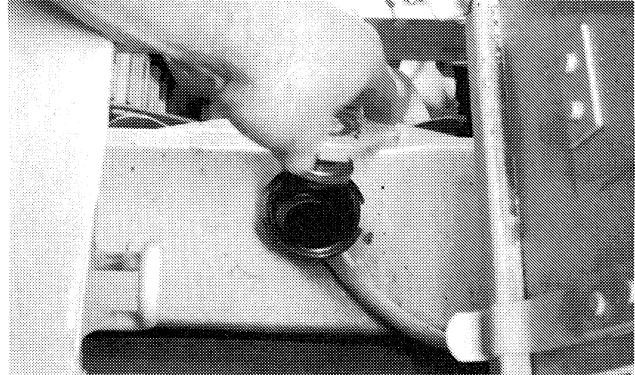
# Periodic Maintenance/500 Hours

## ADD COOLANT CONDITIONER TO RADIATOR



**CAUTION: DO NOT** remove the radiator filler cap unless the engine is cool. Then loosen the cap slowly to the stop. Release all pressure before removing the cap.

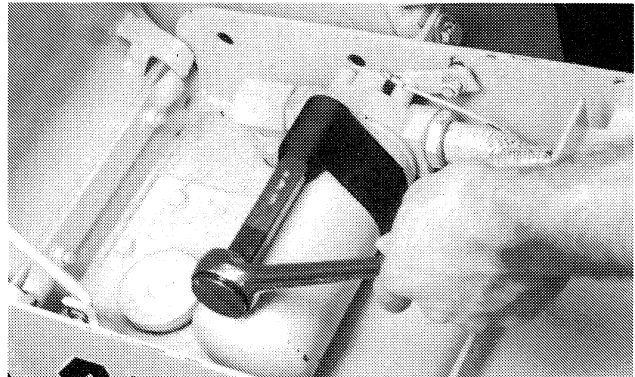
Add 0.5 pt (0.2 L) John Deere Coolant Conditioner (RE12842) or equivalent.



88A/T90686 T82:CRPM AE 300884

## CHANGE HYDRAULIC SYSTEM OIL FILTER

1. Turn latch and lift hydraulic reservoir cover into the lock position.
2. To remove filter, turn counterclockwise.



88A/T90579 T82:CRPM AF 080984

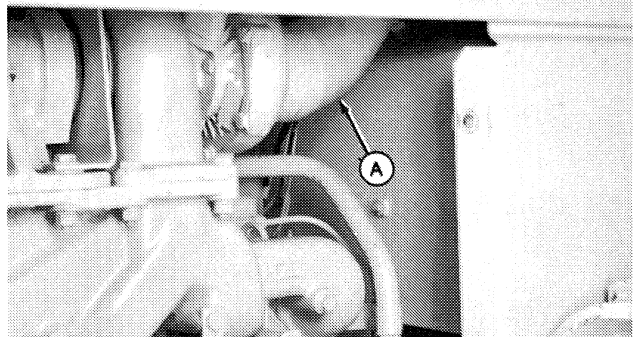
3. Apply thin film of oil to gasket of new filter.
4. Install new filter. Turn filter clockwise by hand until gasket touches mounting surface.
5. Tighten 1/2 to 3/4 turn more.
6. Start the engine. Check for leaks around the filter base. Tighten filter only enough to stop leaks.
7. Stop engine. Check oil level.



88A/T90580 T82:CRPM AG 130984

## CHECK AIR INTAKE HOSE

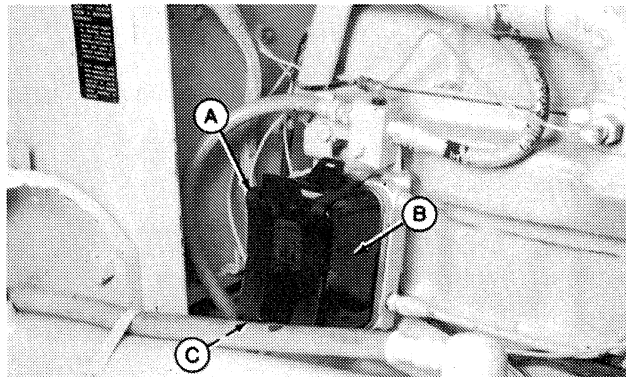
1. Check hose (A) for cracks.
2. Tighten clamps.



88A/T90581 T82:CRPM AH 300884

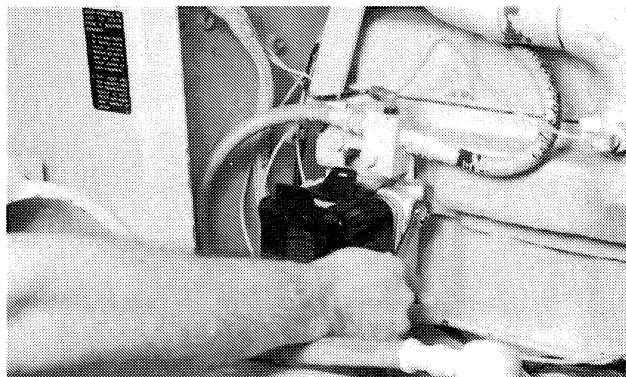
## CHANGE FUEL FILTER ELEMENT

1. Remove right engine side shield.
2. Remove retainer spring (A) and filter element (B).
3. Clean filter base.
4. Install new element on base and snap retainer spring into position.
5. Be sure drain screw (C) is tight.



88A;T90582 T82;CRPM AI 080984

6. Remove air from fuel system. Loosen bleed screw.



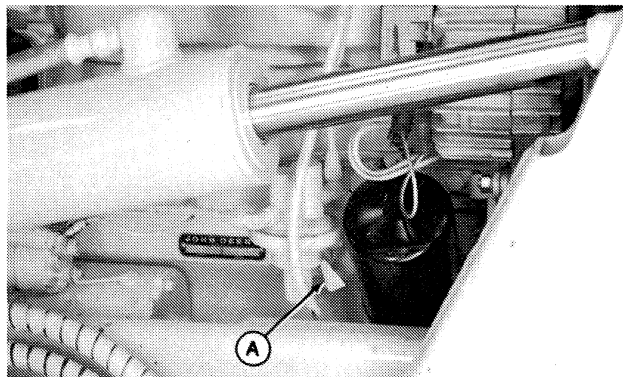
88A;T90704 T82;CRPM BV 260483

7. Pump the primer lever (A) until fuel without bubbles flows from around the bleed screw.

8. Tighten bleed screw.

*NOTE: If no fuel is being pumped, push primer lever toward engine, turn engine crankshaft with starting motor to reposition camshaft. Repeat Step 6.*

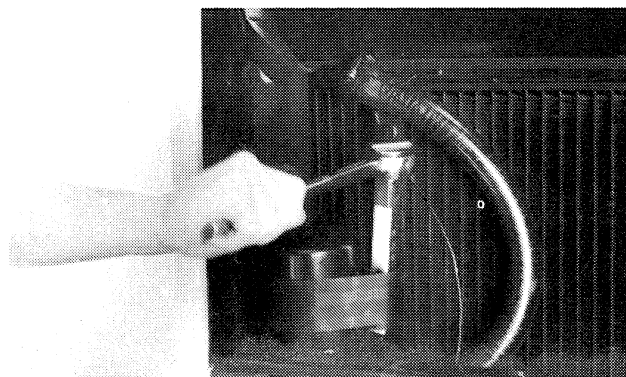
9. Push primer lever toward engine as far as possible.



88A;T90583 T82;CRPM AJ 260483

## CHANGE TRANSMISSION—STEERING CLUTCH OIL FILTER

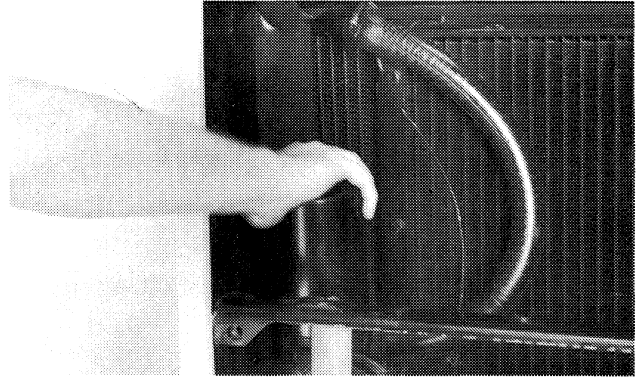
1. Remove grille.
2. Turn filter counterclockwise to remove it.



88A;T90584 T82;CRPM AK 300884



3. Apply thin film of oil to gasket of new filter.
4. Install new filter. Turn filter clockwise by hand until gasket touches mounting surface.
5. Tighten 1/2 to 3/4 turn more.
6. Start the engine. Check for leaks around the filter base. Tighten filter only enough to stop leaks.
7. Stop engine. Check oil level.



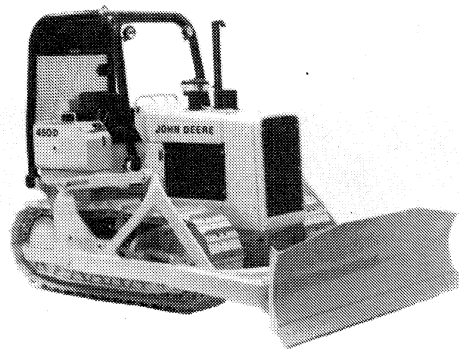
88A;T90585 T82;CRPM AL 300884

# Periodic Maintenance/1000 Hours

## CHANGE HYDRAULIC SYSTEM OIL

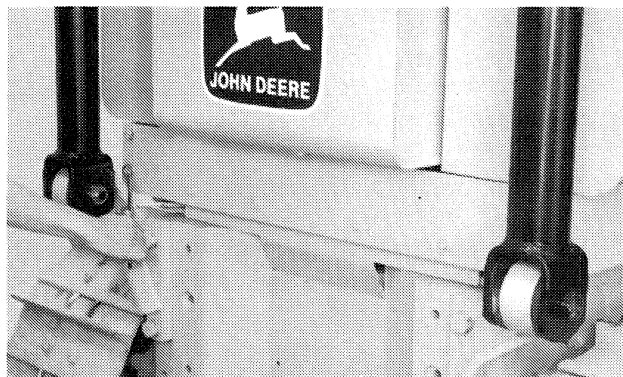
**IMPORTANT: DO NOT** operate machine without oil in reservoir.

1. Park machine on level surface.
2. Lower all equipment to the ground.
3. Turn key switch to OFF.



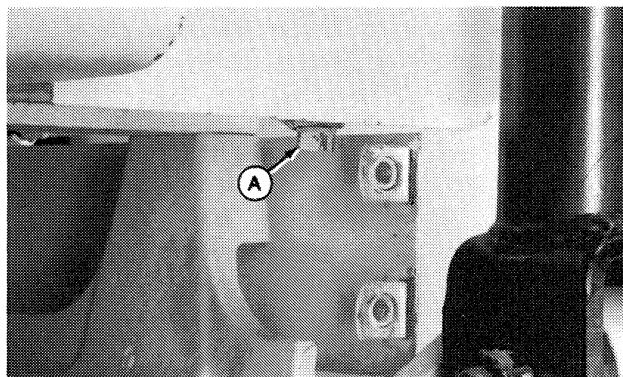
88A;T90549 T82;CRPM AM 080984

4. Open reservoir cover.
5. SLOWLY turn pressure cap. Release any pressure before removing.
6. Remove four cap screws and rear cover.



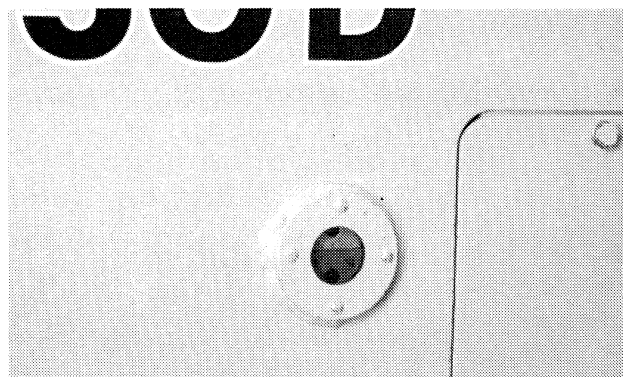
88A;T90730 T82;CRPM AN 080984

7. Remove drain plug and drain all oil. Capacity of reservoir is 6 gal (22.7 L).
8. Install drain plug and tighten.
9. Install rear cover.



88A;T90639 T82;CRPM HD 130984

10. Fill reservoir with oil specified in Fuels and Lubricants chapter.
11. Oil level must be halfway up in window.
12. Install cap and tighten.



88A;T90550 T82;CRPM AO 080984

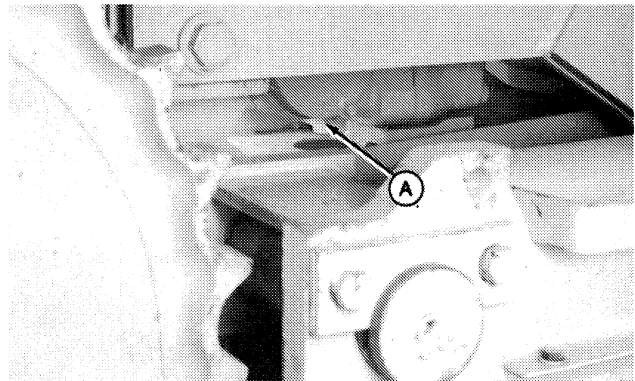
## CLEAN THE ENGINE CRANKCASE VENTILATION TUBE

This will be done while you measure and adjust engine valve clearance. (See Periodic Maintenance/1000 Hours).

T82;CRPM AP 300884

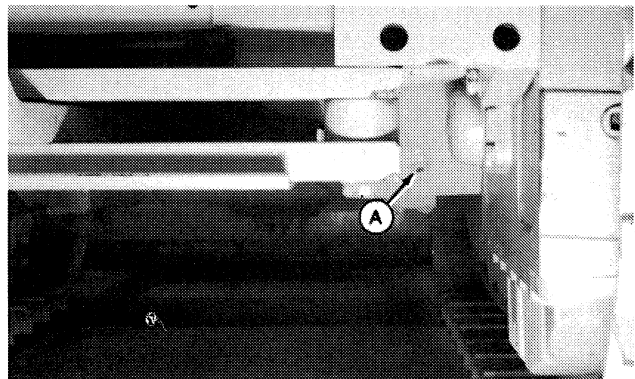
## CHANGE TRANSMISSION AND STEERING CLUTCH HOUSING OIL

1. Park machine on a level surface.
2. Turn key switch to OFF.
3. Remove transmission drain plug (A) and drain all oil. Capacity of transmission is 8 gal (30.4 L).



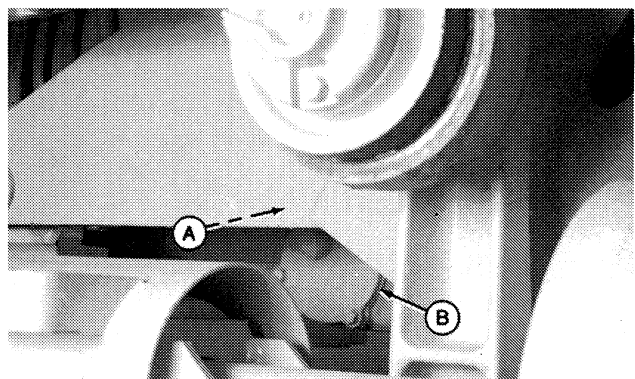
88A;T90641 T82;CRPM AQ 080984

4. Remove steering clutch housing drain plugs (A) (under rear of unit) and drain all oil. Capacity of each housing is 7 gal (26.5 L).



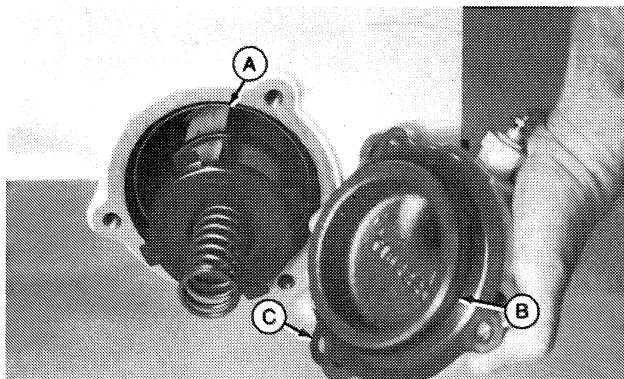
88A;T90642 T82;CRPM AR 110483

5. To remove transmission filter screen, disconnect wire (A).
6. Remove three cap screws, cover (B), spring, and screen.



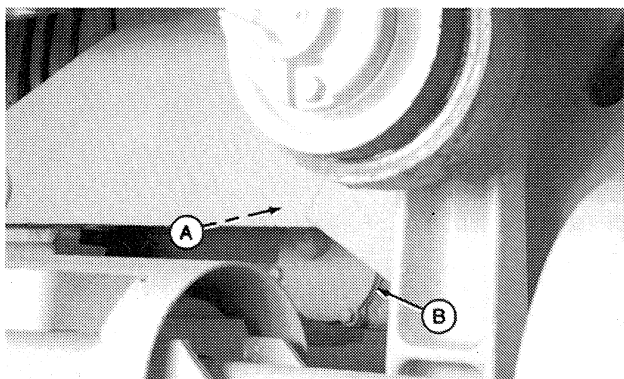
88A;T90643 T82;CRPM AS 230383

7. DO NOT use a wire brush. Clean the screen in diesel fuel with a bristle brush.
8. Rinse screen in clean diesel fuel.
9. Flush screen with water under pressure.
10. Dry screen with compressed air.
11. Check the seal (B), gasket (C) and screen (A) for wear or damage. Install new parts if necessary.



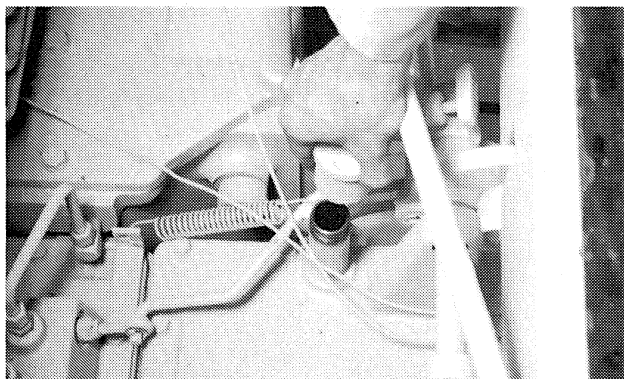
88A;T90644 T82;CRPM AT 300884

12. Install screen, spring, cover (B), and three cap screws.
13. Connect wire (A).
14. Install transmission drain plug.



88A;T90643 T82;CRPM AU 080984

15. Remove seat cushion.
16. Remove transmission dipstick.
17. Fill transmission with oil specified in Fuels and Lubricants chapter.



88A;T90555 T82;CRPM AV 080984

18. Install and tighten steering-clutch-housing drain plugs.
19. Remove fill plugs one on each side of machine.
20. Fill both steering-clutch housings with oil specified in Fuels and Lubricants chapter. Capacity of each housing is 7 gal (26.5 L).
21. Install and tighten both fill plugs.



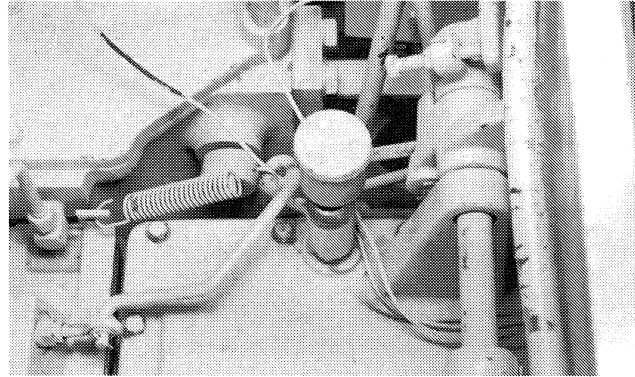
88A;T90701 T82;CRPM HE 130984

22. Run machine for 10 minutes. Check oil level. Bottom of dipstick threaded cap must rest on top of filler tube as shown.

*NOTE: Oil level must be within 0.12 in. (3 mm) of full mark on dipstick.*

23. Install dipstick and tighten cap.

24. Install seat cushion.



88A;T90556 T82;CRPM BU 130984

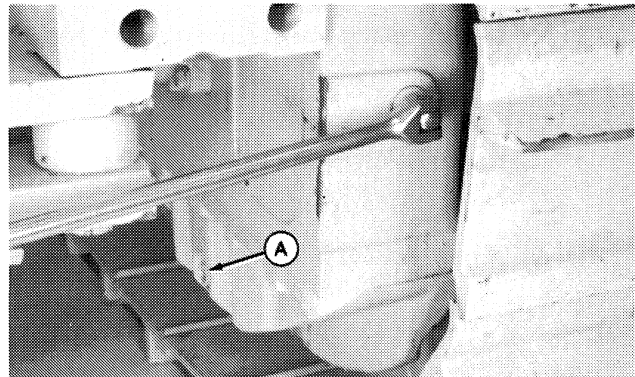
## CHANGE FINAL DRIVES OIL

1. Park machine on level surface.

2. Turn key switch to OFF.

3. Remove fill plug on each side of machine.

4. Remove drain plug (A) on each side of machine and drain all oil. Capacity of each housing is 6.25 qt (5.9 L).



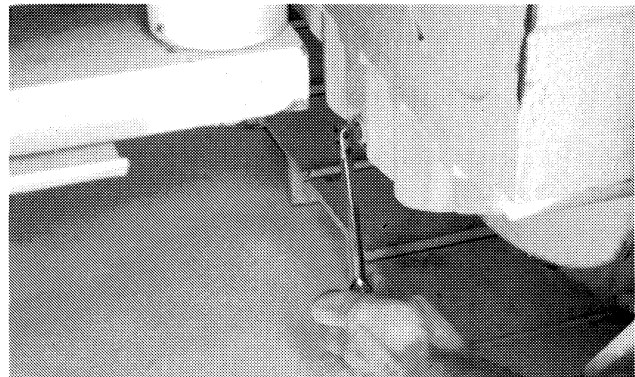
88A;T90647 T82;CRPM AX 080984

5. Install and tighten drain plugs.

6. Fill housing with oil specified in Fuels and Lubricants chapter.

7. Oil level must be up to fill plug opening.

8. Install and tighten fill plug.



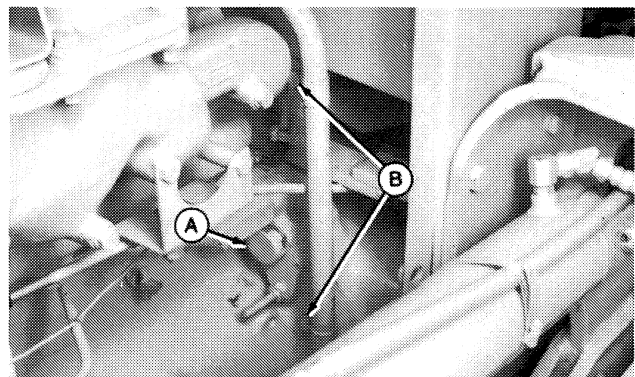
88A;T90648 T82;CRPM AY 080984

## MEASURE AND ADJUST ENGINE VALVE CLEARANCES

1. Remove left engine side shield.

2. Remove two cap screws (B) and crankcase ventilation tube. Clean tube with solvent or diesel fuel. Be sure the tube is not restricted.

3. Remove plug (A) and timing pin.

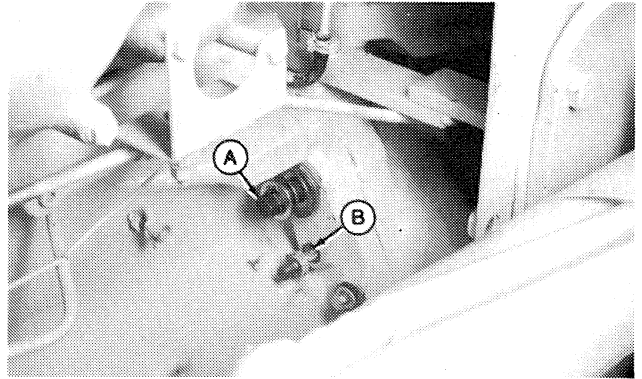


88A;T90649 T82;CRPM AZ 080984



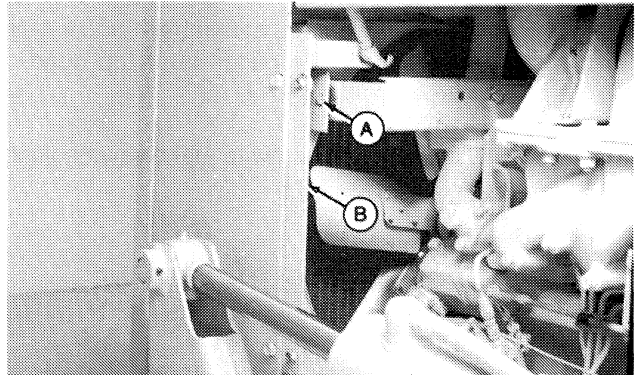
4. Install JDG-443 Flywheel Turning Tool (A). (Available from your John Deere dealer.)

5. Turn flywheel until timing pin (B) goes into timing hole in flywheel.



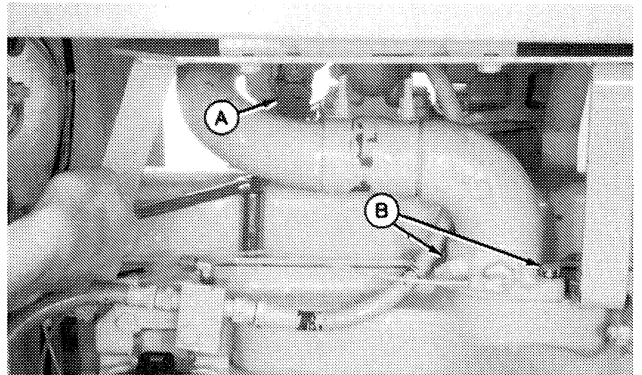
88A;T90650 T82;CRPM BA 080984

6. To remove left engine side shield mounting bracket (B), remove two cap screws (A).



88A;T90651 T82;CRPM BB 080984

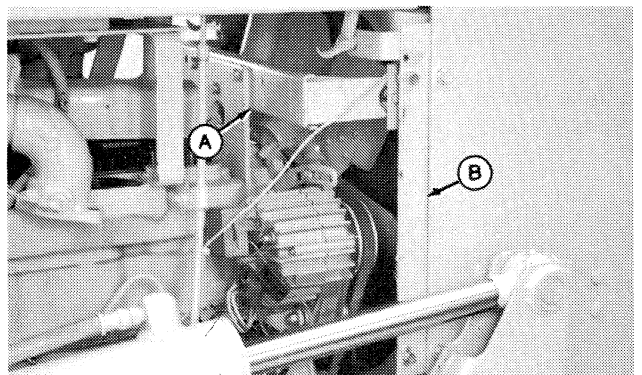
- 7. Remove right engine side shield.
- 8. Remove rocker arm cover cap screws.
- 9. To remove hose (A), loosen both clamps.
- 10. Remove two cap screws (B).



88A;T90652 T82;CRPM BC 080984

11. To remove right engine side shield mounting bracket (B), remove two cap screws.

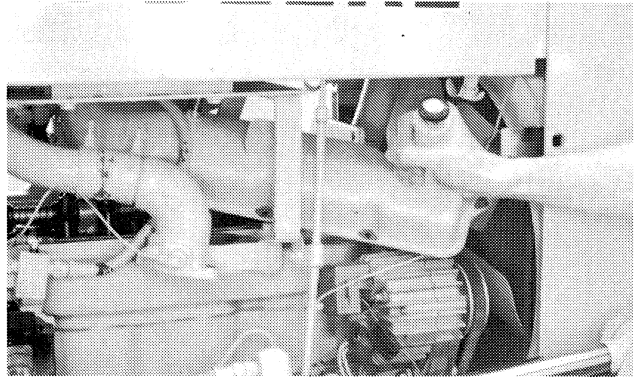
12. To remove upper radiator mounting bracket (A), remove four cap screws.



88A;T90653 T82;CRPM BD 230383

T83;450D P61 100984

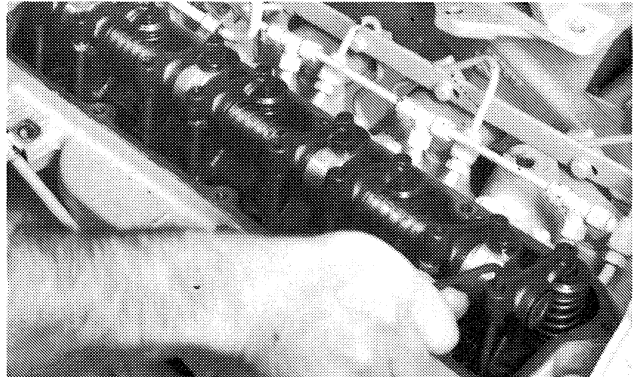
13. Lift rocker arm cover and rotate it clockwise. Move cover toward the front of the machine and out over the top of the alternator as shown.



88A;T90654 T82;CRPM BE 230383

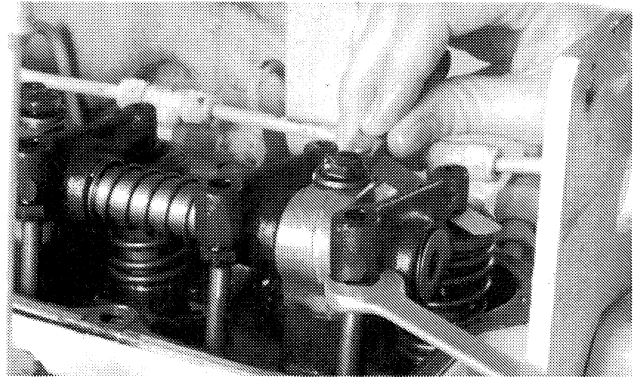
14. Try to move both pushrods at number 1 and 4 cylinders. Loose pushrods indicate the piston is at top dead center (TDC) on compression stroke.

15. Loosen allen head set screw to make valve adjustment.



1TA;T5810AD1 T82;CRPM GX 080984

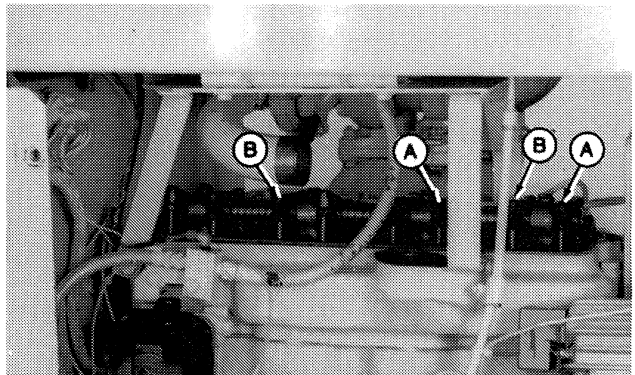
16. Measure valve clearances, record each one and turn adjusting screw to adjust clearances. Adjust only the valves for the piston set at TDC (see below).



88A;T90655 T83;CRPM GY 080984

17. Adjust valve clearance with number 1 cylinder at TDC.

Intake valves (A) ..... 0.014 in. (0.36 mm)  
Exhaust valves (B) ..... 0.018 in. (0.46 mm)



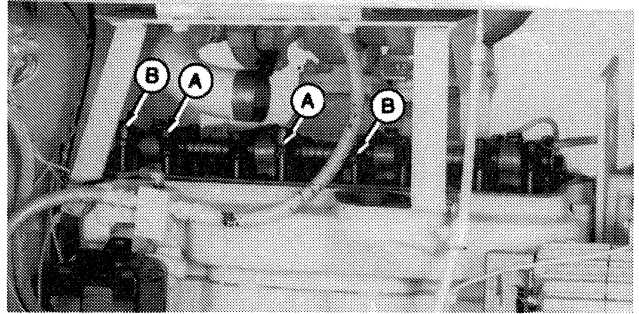
88A;T91572 T82;CRPM GZ 080984



18. Pull timing pin out of flywheel. Turn crankshaft 360° and install timing pin. Adjust valve clearance with number 4 cylinder at TDC.

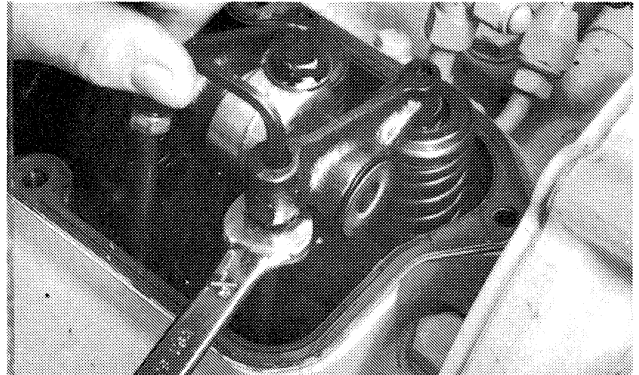
Intake valves (A) ..... 0.014 in. (0.36 mm)  
Exhaust valves (B) ..... 0.018 in. (0.46 mm)

If valve clearance on any valve is excessive, when compared to the other recorded clearance, see your John Deere dealer.



88A;T91573 T82;CRPM HA 080984

19. Tighten allen head set screws to  $84 \pm 36$  lb-in. ( $9.5 \pm 4$  N·m).



88A;T5810AF1 T82;CRPM HB 080984

20. Clean cylinder head and rocker arm cover mating surfaces.

21. Install rocker arm cover gasket. DO NOT use any sealant on the gasket.

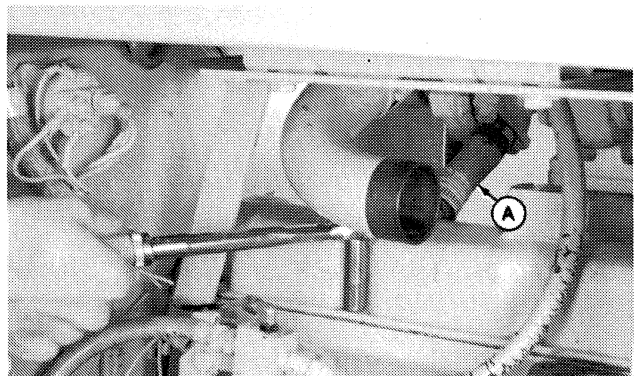
T82;CRPM BT 080984

22. Install rocker arm cover over rocker arm assembly.

23. Connect hose (A) to rocker arm cover.

24. Install and tighten rocker arm cover cap screws to 96 lb-in (10.8 N·m).

25. Tighten hose clamps.

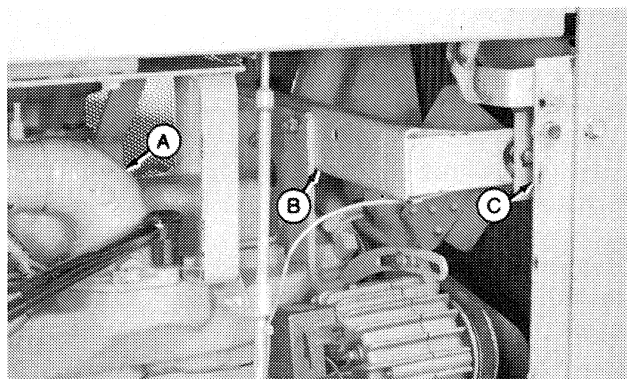


88A;T90658 T82;CRPM BJ 080984

26. Install air intake elbow (A).

27. Install upper radiator mounting bracket (B) and four cap screws.

28. Install right engine side shield mounting bracket (C).

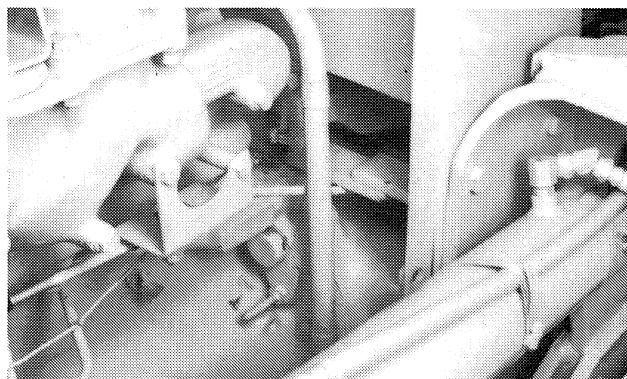


88A;T90659 T82;CRPM BK 080984

29. Remove JDG-443 Flywheel Turning Tool.

30. Install plug and timing pin.

31. Install crankcase ventilation tube. Make sure upper end is properly connected to fitting in rocker arm cover.

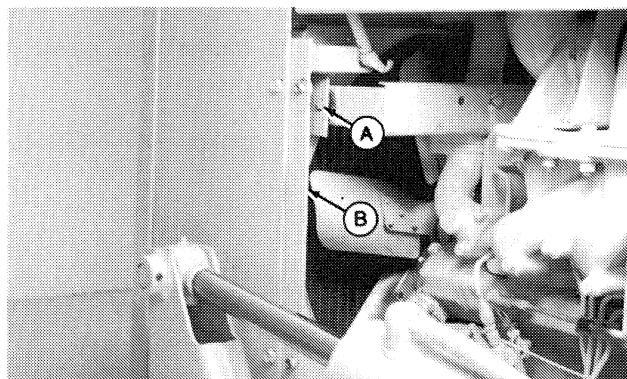


88A;T90660 T82;CRPM BL 080984

32. Install cap screw (A) in upper radiator mounting bracket.

33. Install left engine side shield mounting bracket (B).

34. Install left engine side shield.



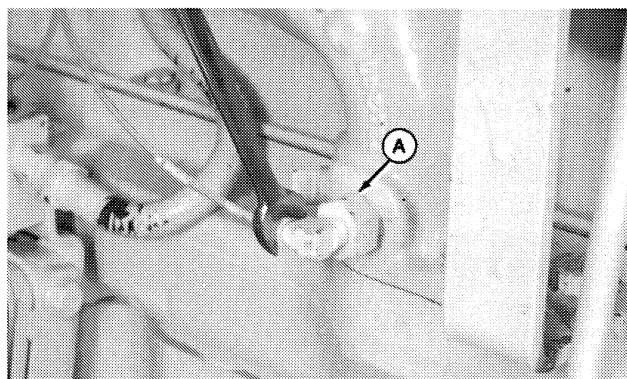
88A;T90651 T82;CRPM BM 080984

## TEST FOR AIR INTAKE LEAKS

35. Plug air cleaner inlet opening using adjustable seal plug or equivalent.

36. Remove start aid nozzle (A) and install a pressure gauge.

37. Connect a regulated and continuous, 13.8-20.7 kPa (2-3 psi), filtered air supply to the pressure gauge.



88A;T90662 T82;CRPM BN 080984

38. If air intake system fails to pressurize, plug exhaust manifold outlet using adjustable seal plug or equivalent or turn engine over slightly to shut partially opened valves.

39. Spray all connections from the air cleaner housing to the air intake manifold on naturally aspirated engines, or turbocharge (suction side) on turbocharged engines, with any harmless soapy solution.

T82;CRPM BQ 080984

40. No leakage is permitted between the air cleaner housing and the air intake manifold on naturally aspirated engines or turbocharger (suction side) on turbocharged engines.

41. Repair as required.

42. Disconnect air supply and remove pressure gauge.

43. Install start aid spray nozzle.

*NOTE: Make certain the nozzle arrow is pointing up when installed.*

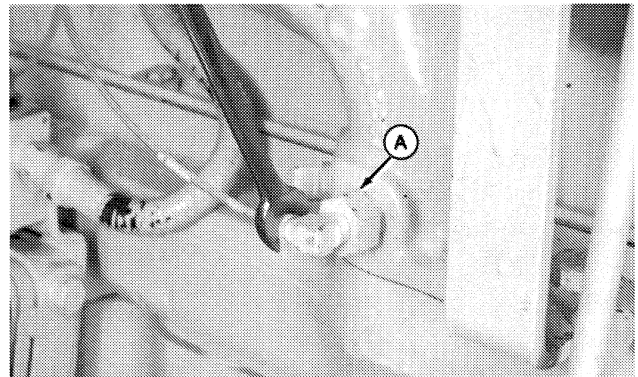
T82;CRPM BP 080984

44. Connect start aid tube to start aid nozzle (A)

45. Install right engine side shield.

46. Unplug air cleaner inlet opening.

47. Install precleaner.



88A;T90662 T82;CRPM BQ 080984

## CHECK ENGINE SPEEDS

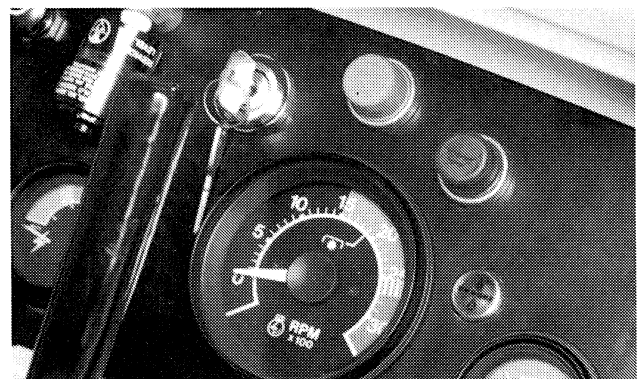
1. Warm engine to normal operating temperature.

2. Use tachometer to check engine speeds:

Slow idle — 800 rpm

Fast idle — 2650 rpm

If engine speeds need adjustment, see your John Deere dealer.



88A;T90438 T82;CRPM BR 300884

# Troubleshooting

## ENGINE

| Problem   | Cause  | Solution   | Page |
|---|--|--|------|
| <b>Engine hard to start,<br/>will not start</b>         | Fuel tank empty.                                   | Fill fuel tank.  | 104  |
|   | Wrong fuel.  | Use correct fuel.  | 38   |
|   | Fuel shut-off valve closed.                        | Open valve.  |      |
|   | Low battery power.                                 | Charge or install new battery.   | 82   |
|   | Plugged line or nozzle on starting fluid adapter.  | Clean line or nozzle.  |      |
|   | Resistance in starting circuit.                    | Clean and tighten battery and starter connections.                             | 82   |
|   | Wrong engine oil.                                  | Use correct oil.   | 39   |
|   | Water, dirt, or air in fuel system.                | Remove air from fuel system.<br>Clean fuel tank outlet screen.                 | 55   |
|   | Injection nozzles dirty or not working correctly.  | See your John Deere dealer.  |      |
|   | Plugged fuel filter.                               | Change element.  | 55   |
|   | Leaks in fuel system.                              | Check fuel system connections.   |      |
|   | Air locked in fuel system.                         | Remove air from fuel system.   | 55   |
|   | Fuel transfer pump primer on upward end of stroke. | Push lever all the way toward engine.  | 55   |
|   | Injection pump solenoid disconnected.              | Connect wire.  |      |
| <b>Engine knocks,<br/>runs irregularly<br/>or stops</b> | Engine oil low.                                    | Add oil.   | 49   |
|   | Plugged air intake system.                         | Clean filter and system.   | 74   |
|   | Injection pump out of time.                        | See your John Deere dealer.  |      |
|   | Plugged fuel filter.                               | Change element.  | 55   |
|   | Low coolant temperature.                           | Thermostat not working correctly or too "cool".<br>See your John Deere dealer. |      |
|   | Water, dirt, or air in fuel system.                | Remove air from fuel system.<br>Clean fuel tank.                               | 55   |
|   | Injection nozzles dirty or faulty.                 | See your John Deere dealer.  |      |
|   | Wrong fuel.  | Use correct fuel.  | 38   |
|   |  |  |      |

| <b>Problem</b>                      | <b>Cause</b>                              | <b>Solution</b>                          | <b>Page</b> |
|-------------------------------------|---|--|-------------|
| <b>Engine has little power</b>      | Air intake system plugged.                | Check air intake system.                 | 74          |
|                                     | Plugged fuel filter.                      | Change filter elements.                  | 55          |
|                                     | Injection nozzles dirty or faulty.        | See your John Deere dealer.              |             |
|                                     | Speed control linkage out of adjustment.  | See your John Deere dealer.              |             |
|                                     | Plugged vent in fuel tank cap.            | Clean or install new cap.                |             |
|                                     | Wrong oil.                                | Use correct oil.                         | 39          |
|                                     | Injection pump out of time.               | See your John Deere dealer.              |             |
|                                     | Engine is too hot.                        | See below.                               |             |
|                                     | Wrong valve clearance.                    | Check and adjust valves.                 | 60          |
|                                     |   |  |             |
| <b>Coolant temperature too high</b> | Low coolant level.                        | Check coolant level.                     | 49          |
|                                     | Thermostat faulty.                        | See your John Deere dealer.              |             |
|                                     | Radiator cap faulty.                      | Install new cap.                         |             |
|                                     | Radiator core or oil cooler core plugged. | Clean radiator core and oil cooler core. |             |
|                                     | Injection pump out of time.               | See your John Deere dealer.              |             |
|                                     | Air cleaner plugged.                      | Clean air cleaner.                       | 74          |
|                                     | Fan belts loose or faulty.                | Tighten or install new belts.            | 46          |
|                                     | Cooling system passages dirty.            | Flush cooling system.                    | 78          |
|                                     | Temperature gauge faulty.                 | Install new gauge.                       |             |
|                                     |   |  |             |
| <b>Coolant temperature too low</b>  | Thermostat faulty.                        | See your John Deere dealer.              |             |
|                                     | Temperature gauge faulty.                 | Install new gauge.                       |             |
| <b>Low engine oil pressure</b>      | Low oil level.                            | Add oil to correct level.                | 49          |
|                                     | Plugged oil filter.                       | Change filter.                           | 53          |
|                                     | Oil leaks or engine temperature too high. | Check for leaks. Check cooling system.   | 78          |
|                                     | Wrong oil.                                | Use correct oil.                         | 39          |
|                                     | Pressure regulating valve defective.      | See your John Deere dealer.              |             |

| <b>Problem</b>                                | <b>Cause</b>                                   | <b>Solution</b>   | <b>Page</b> |
|---|--|---|-------------|
| <b>Engine uses too much oil</b>               | Wrong oil.                                     | Use correct oil.  | 39          |
|   | Oil leaks or engine temperature too high.      | Check engine oil drain plug.<br>Check cooling system.             | 52<br>78    |
|   | Plugged air cleaner.                           | Clean primary element or install new primary and safety elements. | 74          |
| <b>Engine uses too much fuel</b>              | Plugged or dirty air intake system.            | Clean air intake system.  | 74          |
|   | Fuel injection nozzles dirty or faulty.        | See your John Deere dealer.                                       |             |
|   | Wrong fuel.                                    | Use correct fuel.   | 38          |
|   | Injection pump out of time.                    | See your John Deere dealer.                                       |             |
|   | Wrong valve clearance.                         | Needs adjustment.   | 60          |
| <b>Exhaust gas is black or gray</b>           | Wrong fuel.                                    | Use correct fuel.   | 38          |
|   | Plugged or dirty air intake or exhaust system. | Clean air intake and exhaust system.                              | 74          |
|   | Injection pump out of time.                    | See your John Deere dealer.                                       |             |
|   | Injection nozzles dirty or faulty.             | See your John Deere dealer.                                       |             |
|   | Muffler not working correctly.                 | Check muffler.  |             |
| <b>Exhaust gas is white</b>                   | Wrong fuel.                                    | Use correct fuel.   | 38          |
|   | Cold engine.                                   | Run engine until warm.  | 18          |
|   | Thermostat faulty or too "cool".               | See your John Deere dealer.                                       |             |
|   | Injection pump out of time.                    | See your John Deere dealer.                                       |             |
| <b>ELECTRICAL SYSTEM</b>                      |  |   |             |
| <b>Batteries will not take a charge.</b>      | Loose or corroded connections.                 | Clean and tighten.  | 82          |
|   | Low battery power.                             | Install new batteries.  | 82          |
|   | Alternator belt loose or faulty.               | Tighten or install new belt.                                      | 46          |
|   | Alternator cut-in speed wrong.                 | See your John Deere dealer.                                       |             |
| <b>Starter does not work or turns slowly.</b> | Loose or corroded connections.                 | Clean and tighten.  | 82          |
|   | Low battery power.                             | Check specific gravity of each cell.                              | 82          |
|   | Wrong engine oil.                              | Use correct oil.  | 39          |
|   | H-L-R lever not in neutral.                    | Move lever to neutral.  | 15          |

## HYDRAULIC SYSTEM

| Problem  | Cause  | Solution  | Page |
|--|--|---|------|
| <b>Blade lifts or tilts too slowly</b>           | Cold oil.  | Run engine at low rpm until oil is warm.                  |      |
|  | Wrong oil.   | Use correct oil.  | 40   |
|  | Engine rpm slow.   | Operate at specified rpm.                                 | 65   |
|  | Air leak in suction line.                                    | Check suction line.                                       |      |
|  | Worn main hydraulic pump.                                    | See your John Deere dealer.                               |      |
|  | Oil leaks.   | See your John Deere dealer.                               |      |
|  | Suction line plugged.  | Clean or install new suction line.                        |      |
|  | Dirty relief valve.  | See your John Deere dealer.                               |      |
| <b>Blade will not raise or tilt.</b>             | Low oil in reservoir.  | Add oil.  | 48   |
|  | Dirt in relief valve.  | See your John Deere dealer.                               |      |
|  | Main hydraulic pump worn or damaged.                         | See your John Deere dealer.                               |      |
|  | Broken oil line.   | Check for leaks or replace oil lines.                     |      |
|  | Dirt in oil lines or valve.                                  | Clean lines and valve.                                    |      |
|  | Worn control valve.  | See your John Deere dealer.                               |      |
| <b>Blade will not stay up</b>                    | Leaking or broken oil lines from control valve to cylinders. | Check for leaks. Tighten or install new lines.            |      |
|  | Dirty oil.   | Change oil.   | 57   |
|  | Oil leaks.   | See your John Deere dealer.                               |      |
| <b>Pump makes noise</b>                          | Intake line plugged.   | Remove line between tank and pump. Clean the line.        |      |
|  | Dirty pump.  | See your John Deere dealer.                               |      |
|  | Wrong oil.   | Use correct oil.  | 40   |
|  | Intake line kinked.  | Install new line or hose.                                 |      |
|  | Cold oil.  | Run engine at low rpm until oil is warm.                  |      |
| <b>Winch clutch will not engage or disengage</b> | Oil leaks.   | Inspect for broken or cracked lines or loose connections. |      |

| Problem                         | Cause  | Solution  | Page       |
|---------------------------------|--|---|------------|
| <b>Oil temperature too high</b> | Wrong operating procedure.                     | Move control lever to neutral position immediately after reaching end of cycle. | 27, 29, 31 |
|                                 | Wrong relief valve pressure.                   | See your John Deere dealer.   |            |
|                                 | Wrong oil.                                     | Use correct oil.  | 40         |
|                                 | Dirty oil.                                     | Change oil.   | 57         |
|                                 | Oil lines plugged.                             | Clean or install new lines.   |            |
| <b>Oil foams</b>                | Air leak in line from tank to pump.            | Check and tighten.  |            |
|                                 | Kink, dent or other restrictions in oil lines. | Install new oil lines.  |            |
|                                 | Worn packing around pump shaft.                | See your John Deere dealer.   |            |
|                                 | Wrong oil.                                     | Use correct oil.  | 40         |
|                                 | Water in oil.                                  | Change oil.   | 57         |

### **BRAKES**

|                                     |                                      |                             |       |
|-------------------------------------|--------------------------------------|-----------------------------|-------|
| <b>Brakes not working correctly</b> | Brakes will not release.             | Need adjustment.            | 94,95 |
|                                     | Self adjuster not working correctly. | Adjust manually.            | 94,95 |
| <b>Winch brake band slips</b>       | Brake band adjustment is wrong.      | See your John Deere dealer. |       |
|                                     | Too much heat in brake band.         | Let brake band cool.        |       |
|                                     | Oil or grease on brake facing.       | Install new facing.         |       |

### **TRANSMISSION**

|                                 |  |                                  |    |
|---------------------------------|--|----------------------------------|----|
| <b>Oil temperature too high</b> | Radiator plugged.                        | Clean radiator core.             |    |
|                                 | Low or high oil level.                   | Change oil level.                | 49 |
|                                 | Too much shifting under heavy load.      | Shift to low transmission range. | 21 |
|                                 | Temperature gauge not working correctly. | See your John Deere dealer.      |    |
|                                 | Wrong oil.                               | Change oil.                      | 40 |
| <b>Shift difficulty</b>         | Misadjusted or worn linkage.             | See your John Deere dealer.      |    |



# Maintenance

## DO NOT SERVICE INJECTION NOZZLES

**IMPORTANT: DO NOT service or remove injection nozzles. The service life of the injection nozzles may be shortened by:**

**Overheating                      Improper operation**  
**Poor quality fuel              Excessive idling**

If injection nozzles are not working correctly or are dirty, the engine will not run normally. See your John Deere dealer for service.

T82;SKMA A 150482

## DO NOT CHANGE INJECTION PUMP

**IMPORTANT: DO NOT clean a warm injection pump with steam or water. Clean trash regularly from under injection pump.**

Changing the injection pump in any way not approved by the manufacturer will end the warranty. See your copy of the John Deere warranty on this machine.

Do not service an injection pump that is not operating correctly. See your John Deere dealer for service.

T82;SKMA B 230382

## FUEL MAINTENANCE

Fill fuel tank at end of each work day to purge humid air from fuel tank.

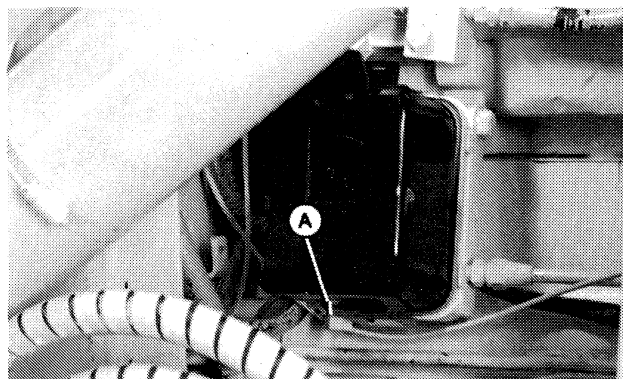
Drain water from fuel tank at beginning of each work day.

T82;CRMA BG 080984

## DRAINING FUEL FILTER SEDIMENT

Drain water and sediment daily or as necessary.

1. Loosen drain screw (A).
2. Drain liquid for several seconds.
3. Tighten drain screw.
4. Remove air from fuel system. See "Change Fuel Filter Element" in Periodic Maintenance/500 Hours chapter.

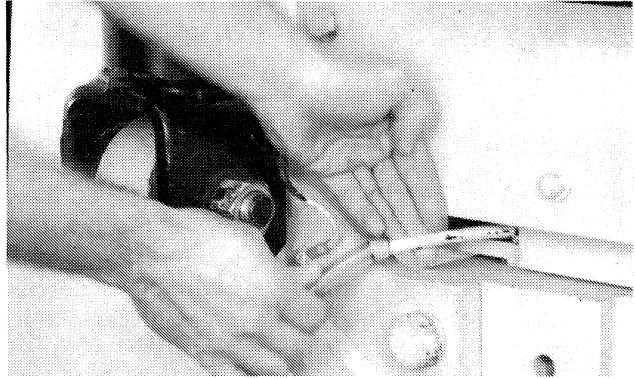


88A/T90675 T82;CRMA A 080984

## CLEAN FUEL TANK OUTLET SCREEN

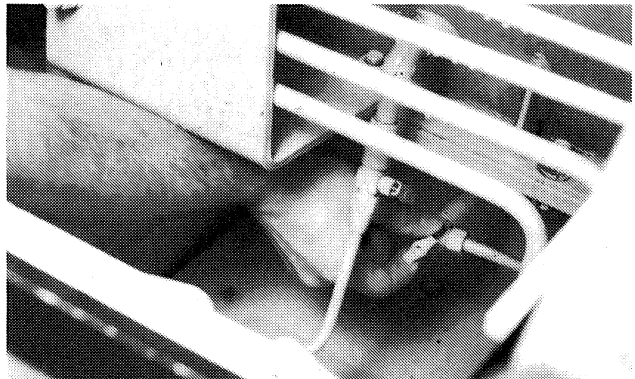
If screen is plugged, debris must be removed and strainer cleaned.

1. Connect piece of hose to drain hose at rear of machine and insert end into container. Fuel tank holds 31 gal. (117L) when full.
2. Remove fuel tank cap.
3. Remove seat cushion.



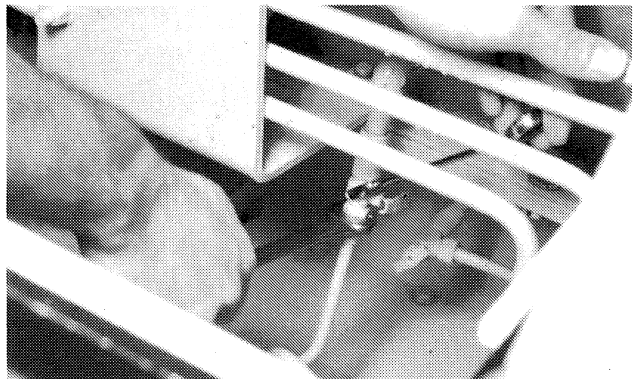
88A;T90676 T82;CRMA B 110483

4. Open drain valve to drain fuel from tank.



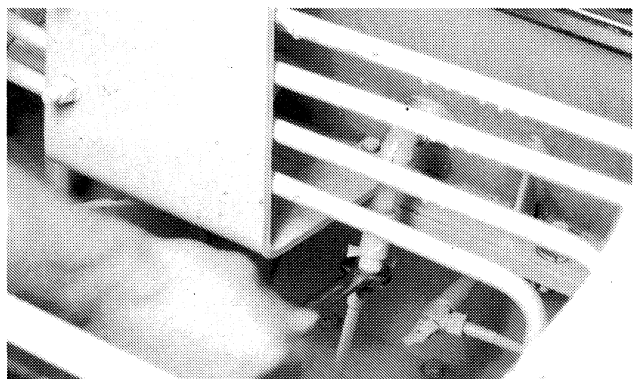
88A;T90565 T82;CRMA C 240383

5. Disconnect fuel line from fuel shut-off valve.



88A;T90677 T82;CRMA D 110383

6. Remove shut-off valve, coupling and nipple from elbow.



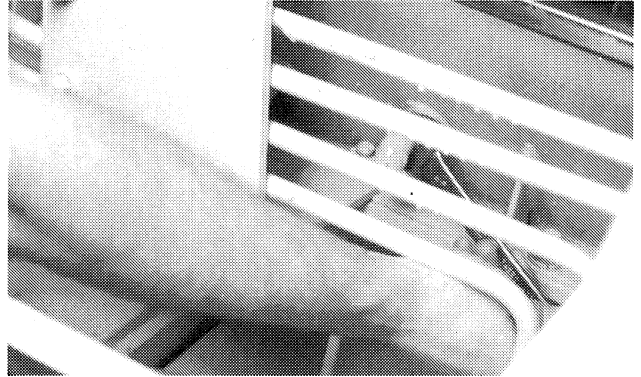
88A;T90678 T82;CRMA E 110383

T83;450D P72 100984

7. Remove elbow and pipe bushing from tank.

**IMPORTANT:** Use a screwdriver with a wide blade to avoid damaging the fuel screen.

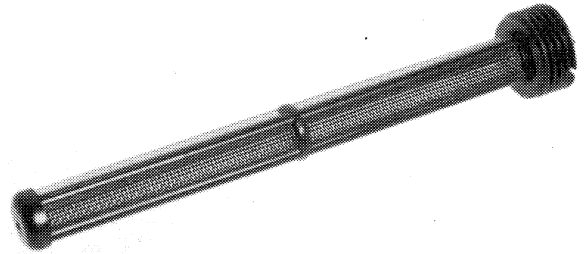
8. Use a screwdriver to remove screen from tank.



88A;T90679 T82;CRMA F 300884

9. Remove debris from screen with clean solvent or diesel fuel or install a new screen.

10. Flush debris out of fuel tank.



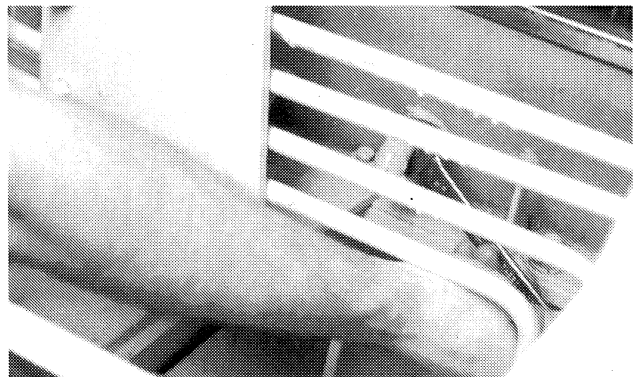
88A;T90680 T82;CRMA G 300884

11. Install fuel screen in tank. Tighten with a wide blade screwdriver until snug.

T82;CRMA H 110483

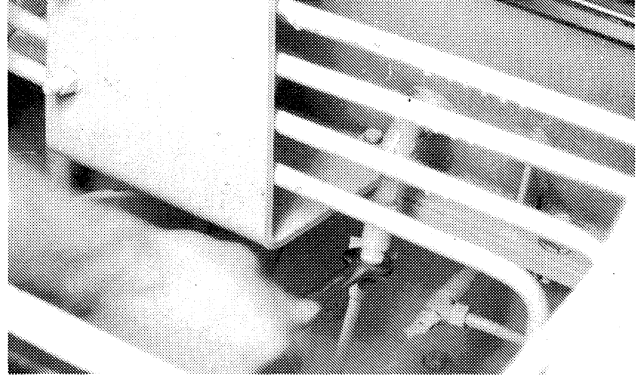
12. Apply a liquid thread sealer on threads of valve and fittings.

13. Install pipe bushing and elbow. Tighten securely.



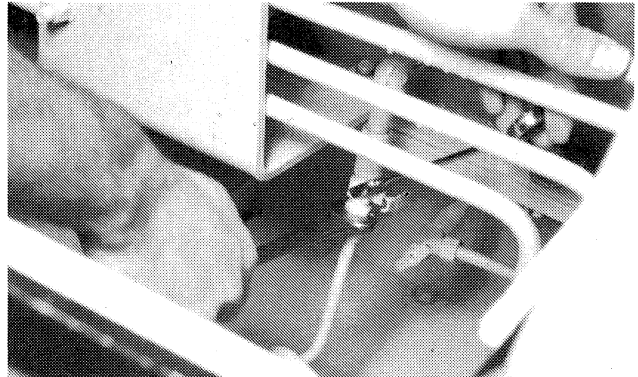
88A;T90679 T82;CRMA I 300884

14. Assemble nipple, coupling and shut-off valve with elbow.



88A;T90678 T82;CRMA J 240383

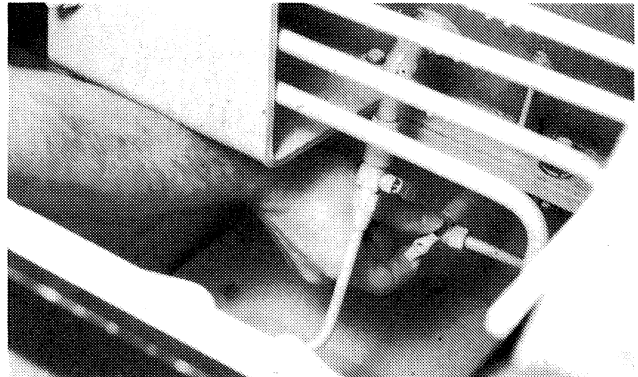
15. Connect fuel line to fuel shut-off valve.



88A;T90677 T82;CRMA K 110383

16. Close fuel drain valve.

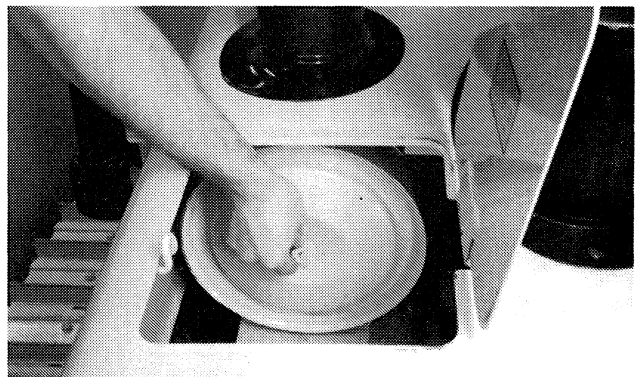
17. Fill fuel tank. Tank holds 31 gal (117 L).



88A;T90565 T82;CRMA L 110383

## REMOVE AIR FILTER ELEMENTS

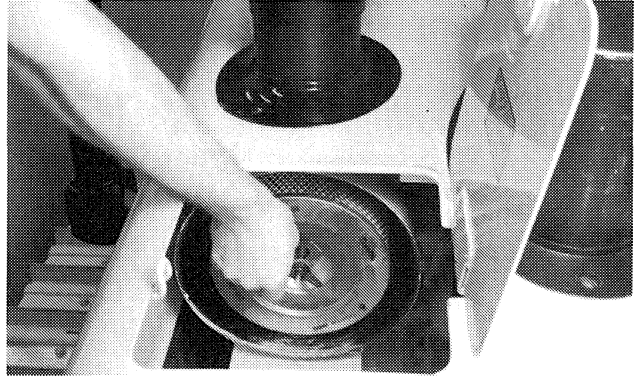
1. Open engine service door on hood.
2. Turn knurled nut to remove air cleaner cover.



88A;T90681 T82;CRMA M 300884

T83;450D P74 100984

3. Remove wing nut to remove primary element.



88A;T90682 T82;CRMA N 110383

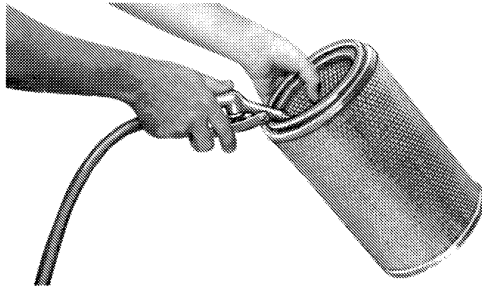
4. Remove wing nut to remove secondary element.



88A;T90683 T82;CRMA O 110383

### CLEAN DUSTY ELEMENT

1. Tap element with the palm of your hand, NOT ON A HARD SURFACE.
2. If this does not remove dust, use compressed air under 30 psi (210 kPa).
3. Direct air up and down the pleats from inside to outside. Be careful not to make a break in the element.

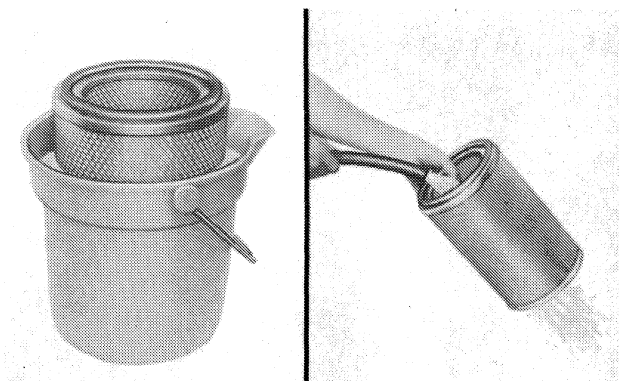


88A;T47764 T82;CRMA P 110383

## CLEAN OILY OR SOOTY ELEMENT

**IMPORTANT:** DO NOT wash element in fuel oil, oil, gasoline, or solvent. DO NOT use compressed air to remove water from an element.

1. Wash element in warm water and John Deere R36757 Filter Element Cleaner or equivalent non-sudsing detergent.
2. Flush with clean water. Use water pressure under 40 psi (280 kPa).
3. Shake the element to remove water. Do not install element unless it is dry.



88A;T90673 T82;CRMA Q 240383

## INSPECT ELEMENT

**IMPORTANT:** Install a new primary element:

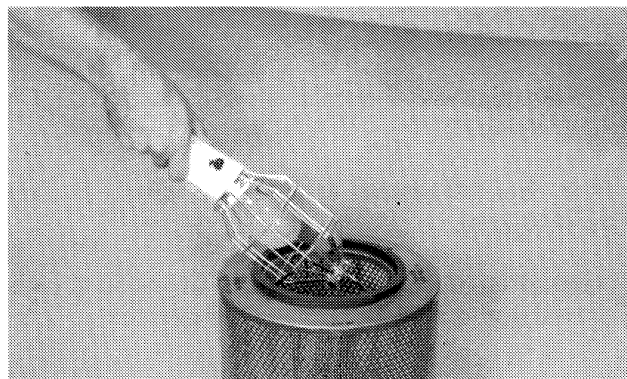
1. If the element shows damage.
2. If element will not clean.
3. After 1000 hours service.

**IMPORTANT:** Install a new secondary element:

1. If the primary element is damaged and needs to be replaced.
2. If the element is visibly dirty.
3. After 1000 hours service.

**IMPORTANT:** DO NOT clean a secondary element. Install a new element.

1. Put a lighted bulb inside element.
2. Inspect element and gasket for damage.
3. Throw away element that has the smallest break. If gasket is broken or missing, install a new element.



88A;T90684 T82;CRMA R 071183

T83;450D P76 100984

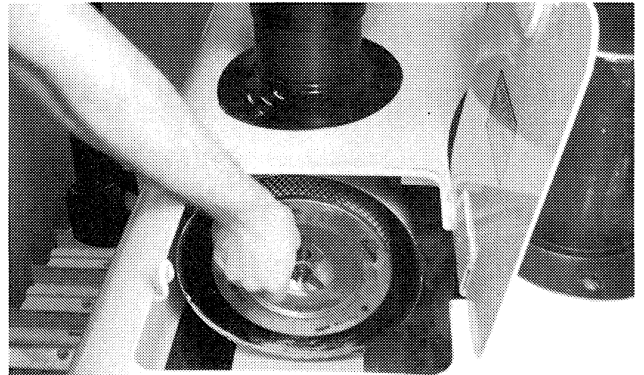
## INSTALL AIR FILTER ELEMENTS

1. Wipe inside of air cleaner with a damp cloth to remove debris.
2. Install secondary element with wing nut. Tighten wing nut securely.



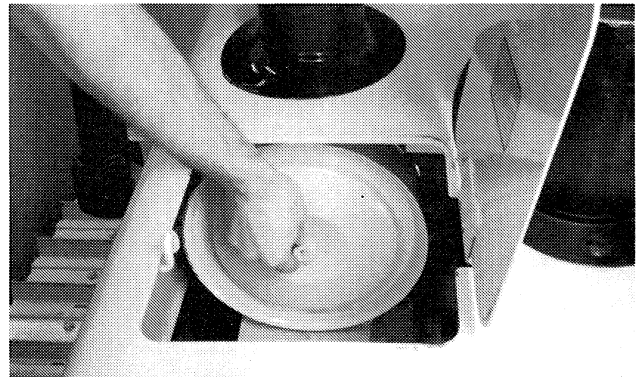
88A;T90683 T82;CRMA S 240383

3. Install primary element with wing nut. Tighten wing nut securely.



88A;T90682 T82;CRMA T 110383

4. Install air cleaner cover and tighten knurled nut securely.
5. Close engine service door.



88A;T90681 T82;CRMA U 300884

6. Push button on air restriction indicator to reset the indicator.



88A;T90685 T82;CRMA V 110383

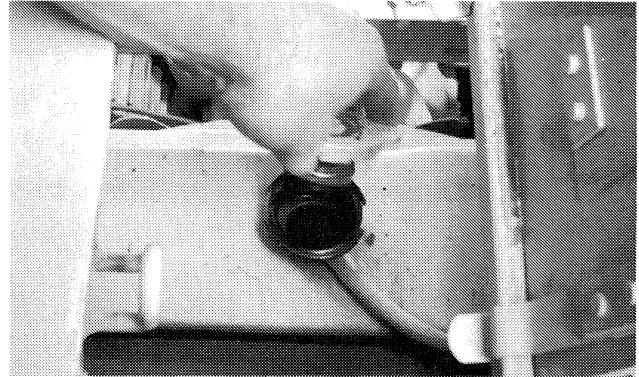


## SERVICE THE COOLING SYSTEM



**CAUTION: DO NOT** remove radiator cap unless engine is cool. Then turn the cap slowly to the stop. Release all pressure before you remove cap.

Drain, flush, and fill the cooling system every Fall.



88A;T90686 T82;CRMA W 110483

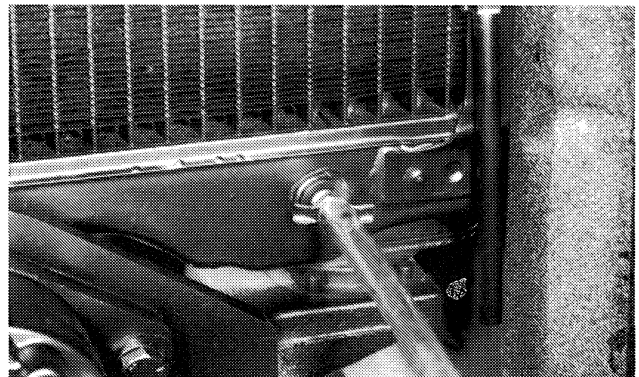
## DRAIN THE COOLING SYSTEM

1. To drain the radiator, remove the grille.
2. Remove two cap screws to remove shield.



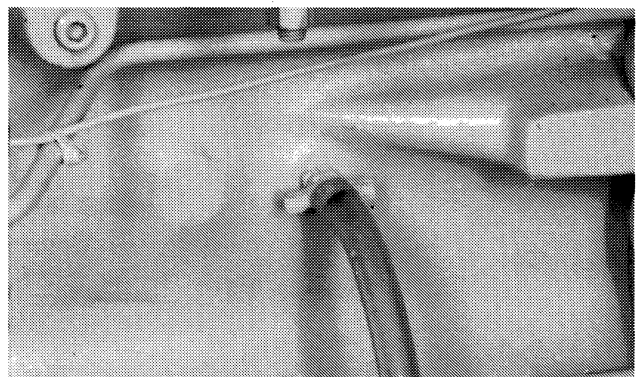
88A;T90687 T82;CRMA X 240383

3. Connect a hose to drain cock.
4. Turn drain cock counterclockwise to open valve.
5. Remove radiator cap.
6. Close valve after coolant is drained.



88A;T90202 T82;CRMA BF 300884

7. To drain the cylinder block, remove the left engine side shield.
8. Connect a hose to drain cock.
9. Turn drain cock counterclockwise to open valve.
10. Close valve after coolant is drained.



88A;T90688 T82;CRMA Y 240383

T83;450D P78 100984



## FLUSH THE COOLING SYSTEM

Use John Deere Heavy Duty Cooling System Cleaner with Detergent, John Deere Cooling System Quick Flush, or an equivalent.

T82;BHMA C 270882

## TEST WATER CONTENT

**IMPORTANT:** High levels of mineral content in your water may cause cooling system problems. Only use water within the acceptable range as shown in the table.

The table gives the acceptable water for use in a ethylene glycol-type antifreeze and water mixture.

| Acceptable Water                 |                             |                       |
|----------------------------------|-----------------------------|-----------------------|
| Water Content                    | 50% Antifreeze<br>50% Water | Without<br>Antifreeze |
| Chlorides                        | 100 ppm<br>or less          | 50 ppm<br>or less     |
| Sulfates                         | 100 ppm<br>or less          | 50 ppm<br>or less     |
| Hardness as<br>CaCO <sub>3</sub> | 200 ppm<br>or less          | 100 ppm<br>or less    |
| Dissolved Solids                 | 500 ppm<br>or less          | 250 ppm<br>or less    |
| pH                               | 6.5 or higher               | 6.5 or higher         |

ppm = parts per million

44A;T5882AP T82;EXPM CX 210584

## FILL THE COOLING SYSTEM

Capacity is 4 gal (15 L).

Coolant level (cold) should be 1 in. (25 mm) below bottom of filler neck.

For temperatures above freezing, fill the cooling system with clean, soft water.

For cold weather, use a solution of only ethylene glycol antifreeze and clean, soft water. A chart on the antifreeze container tells how much antifreeze to use for the freeze protection needed in your area.

DO NOT use methoxy propanol anti-freeze (such as Dowtherm 209 anti-freeze or its equivalent) in the coolant solution. It may damage the cylinder sleeves and seals.

Add .5 pt (0.2 L) John Deere Coolant Conditioner (RE12842) or equivalent after 500 hours or 6 months after you changed coolant. Add conditioner when you fill cooling system with water, or if you replace one-third or more of coolant.

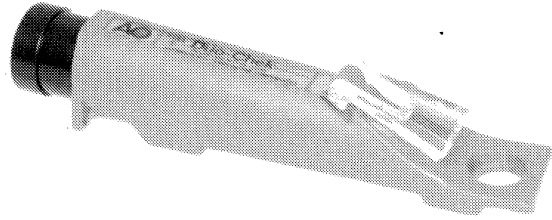
T82;CRMA Z 300884

T83;450D P79 100984

## TEST THE COOLANT FREEZE— PROTECTION LEVEL

See your John Deere dealer for the SERVICE-GARD™ coolant and battery tester (JTO-5460). Follow directions included with the tester.

If you operate your engine in extremely cold temperatures, see your John Deere dealer for information on arctic operation.



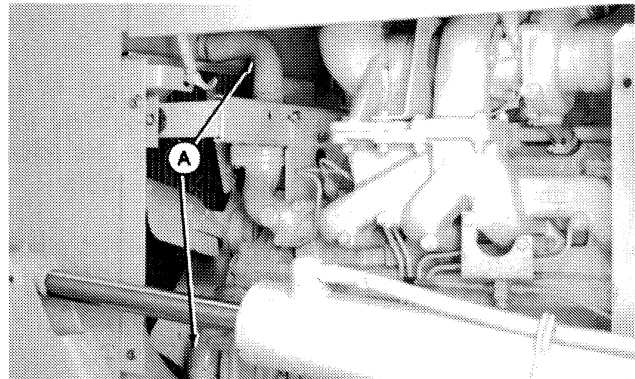
88A;T85402 T82;BHMA E 080284

## CHECK HOSES

Check hoses (A) for cracks and leaks.

Tighten clamps.

Clean radiator fins.



88A;T90689 T82;CRMA AA 080984

## SERVICE BATTERIES CAREFULLY



**CAUTION:** An explosive gas is produced while batteries are in use or being charged. Keep flames or sparks away from the battery area. Make sure the batteries are charged in a well ventilated area.



**CAUTION:** Never lay a metal object on top of a battery as a short circuit can result.



**CAUTION:** Sulfuric acid in battery electrolyte is poisonous. It can cause severe burns if it contacts the skin. When you work in battery area, protect eyes and face from spilled electrolyte.

If electrolyte is spilled on you:

1. Immediately remove any clothing on which electrolyte spills.
2. If electrolyte contacts the skin, rinse the affected area with running water for 10 to 15 minutes. Get medical attention immediately.
3. If electrolyte contacts eyes, flood the eyes with running water for 10 to 15 minutes. Get medical attention immediately. Never use any medication unless prescribed by a doctor.

If electrolyte spills on the floor, use one of the following mixtures to neutralize the acid: 1 lb (0.5 kg) baking soda in 1 gal (4 L) water, or 1 pt household ammonia in 1 gal (4 L) water.

**IMPORTANT:** Electrolyte can damage paint and metal surfaces of your machine. Do not overfill the battery cells.

T82;CRMA AB 240383

## CHECKING ELECTROLYTE SPECIFIC GRAVITY



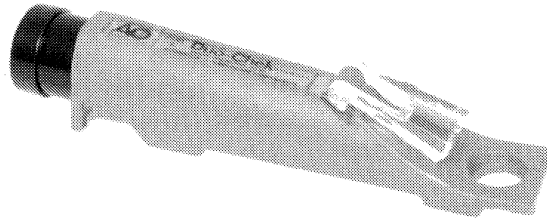
**CAUTION: Battery gas can explode. Keep sparks and flames away from batteries.**

Check the specific gravity of electrolyte in each battery cell.

See your John Deere dealer for the SERVICE-GARD™ battery and coolant tester (JT05460). Follow directions included with the tester.

A fully charged battery will have a corrected specific gravity reading of 1.260. If the reading is below 1.200, charge the battery.

*NOTE: In tropical areas, use 1.225 for the full-charge reading. In cold areas, use 1.280 for the full-charge reading.*



88A;T85402 T82;EXMA H 260184

## USING BATTERY CHARGER

A battery charger may be used as a booster to start engine.

**IMPORTANT: Do not use battery charger as a booster if a battery has a 1.150 specific gravity reading or lower. Turn off charger before you connect or disconnect it from battery.**



**CAUTION: Disconnect negative cables before you charge batteries in the machine.**

T82;EXMA G 230884

## REPLACING BATTERIES

Your machine will have one or two 12 volt batteries with negative (-) ground. Use only batteries meeting following specifications:

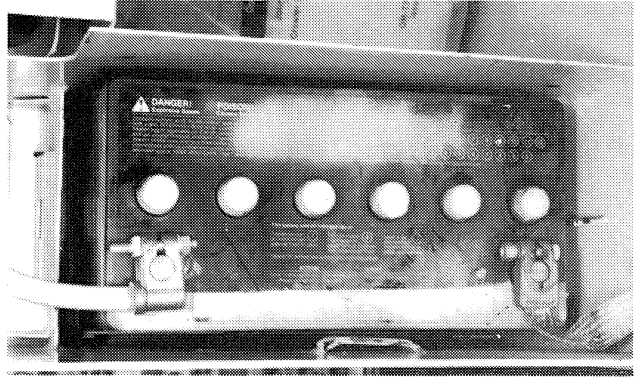
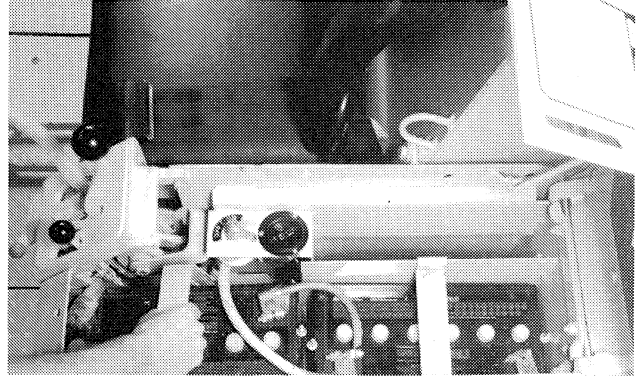
- 30H BCI Group
- 570 cold cranking amps at -18°C (0°F)
- 450 cold cranking amps at -29°C (-20°F)
- 180 minutes reserve capacity at 25 amps

T82;CRMA AC 300884

T83;450D P82 100984

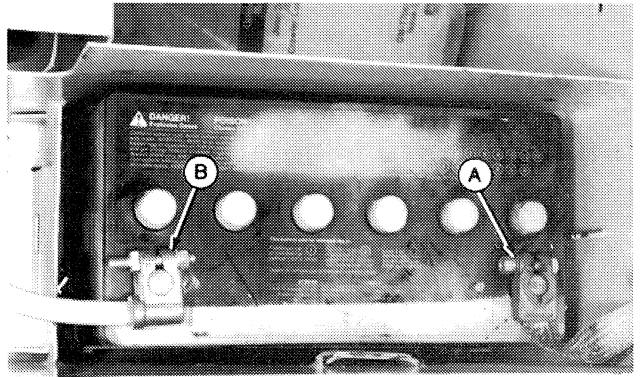
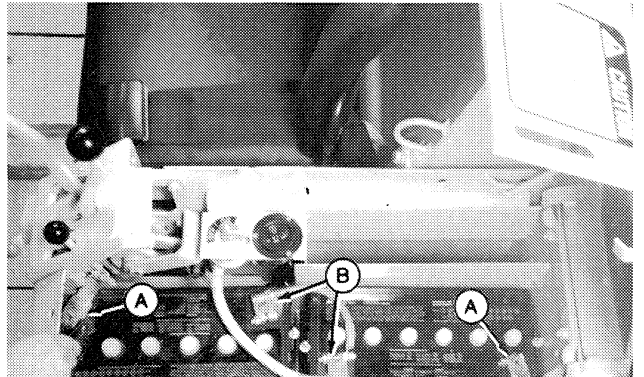
## REMOVE AND INSTALL BATTERY/BATTERIES

1. Open tool box cover and turn battery disconnect switch to OFF.
2. Remove tool tray, board and two supports.



88A;T90690, T90914 T82;CRMA AD 240383

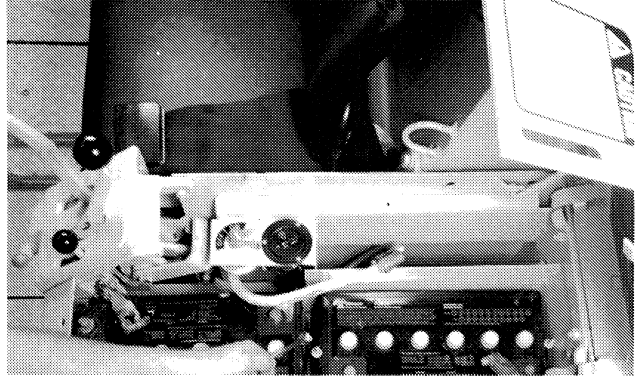
3. Disconnect negative (-) battery cable(s) (A) first, then positive (+) cable(s) (B).



88A;T90691, T90915 T82;CRMA AE 110483

T83;4500 P83 100984

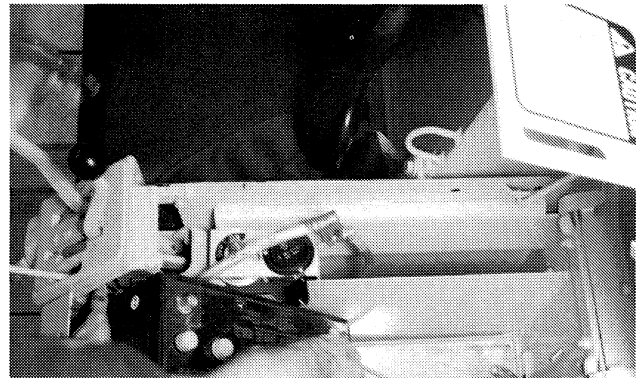
4. Remove two nuts on each battery to remove hold down frame(s) .



88A;T90692 T82;CRMA AF 240383

5. Lift out battery/batteries.

*NOTE: If machine has two batteries, lift the rear battery up and tilt forward to remove. The front battery can then be tilted back and lifted out.*



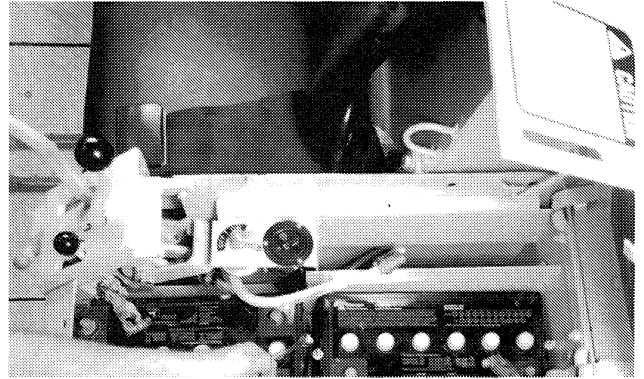
88A;T90693, T90916 T82;CRMA AG 240383

6. Check cables and clamps for damage and wear.
7. Make certain that the battery/batteries are fully charged.
8. Set the battery/batteries in the compartment making sure they are level.

T82;CRMA AH 240383

T83;450D P84 100984

9. Install a hold down frame with two nuts on each battery. Tighten nuts evenly.

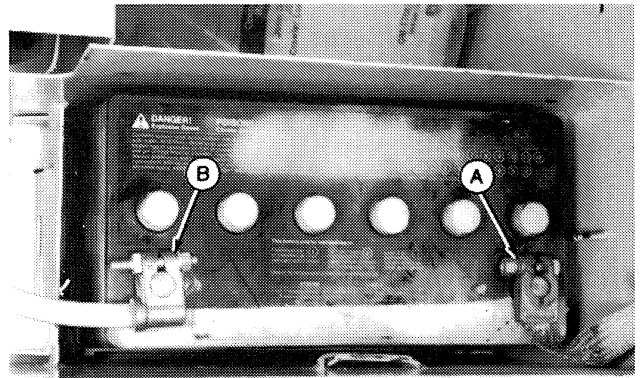
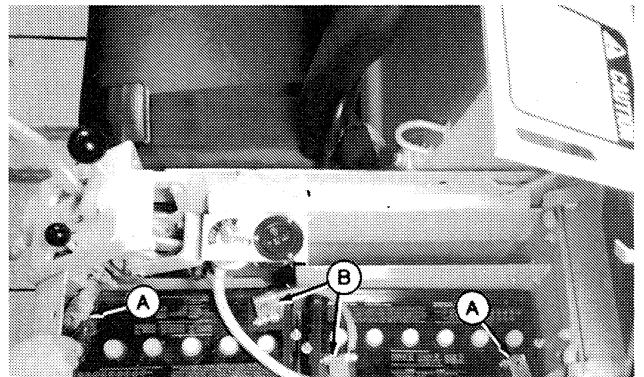


88A;T90692 T82;CRMA AI 230383

10. Connect the cables and tighten the connections. Connect the positive (+) cable(s) (B) first, then the negative (-) cable(s) (A).

11. Install two supports, board and tool tray.

12. Turn battery disconnect switch to ON. Close cover.



88A;T90691, T90915 T82;CRMA AJ 300884

## CHECK NEUTRAL START SYSTEM



**CAUTION: Avoid possible injury or death. Be sure all people are away from machine.**

1. Apply brake and engage lock.
2. Move gear shift lever to neutral position. Disengage HLR lever neutral lock.
3. Move HLR lever to each gear position and try to start engine. If engine starts, see your John Deere dealer.

T82;CRMA DP 080984



## **PRECAUTIONS FOR ALTERNATOR AND REGULATOR**

When batteries are connected, follow these rules:

1. Disconnect negative (-) battery cable when you work on or near alternator or regulator.
2. DO NOT TRY TO POLARIZE ALTERNATOR OR REGULATOR.
3. Be sure alternator wires are correctly connected BEFORE you connect batteries.
4. Do not ground alternator output terminal.
5. Do not disconnect or connect any alternator or regulator wires while batteries are connected or while alternator is operating.
6. Connect batteries or a booster battery in the correct polarity (positive [+] to positive [+] and negative [-] to negative [-]).
7. Do not disconnect the batteries when engine is running and alternator is charging.
8. Disconnect battery cables before you connect battery charger to the batteries.

T82;EXMA I 300884

## **RESETTING CIRCUIT BREAKERS**

If the circuit breaker opens because of a short circuit or overloading, lights will go out.

Turn off the light switch and key switch. Wait one minute before starting machine or turning on lights.

The circuit breaker will reset itself.

T82;CRMA AL 130984

T83;450D P86 100984

If circuit continues to open, lights flicker, become dim, or engine does not run smoothly, see your John Deere dealer.

If cigar lighter does not work, remove rear panel of cowl. Insert a wire in the small hole on the end of the lighter to reset the circuit breaker.

T82;CRMA AM 240383




## HARDWARE TORQUE SPECIFICATIONS

Check all cap screws and nuts, which can be easily reached, to be sure they are tight. If hardware is loose, tighten it to torque shown on the following chart on next page unless a special torque is specified.

T82;EXMA V 150383

**NOTE:** Torques shown are for dry (no lubrication on threads) hardware.

**NOTE:** Torque wrench tolerance is  $\pm 10$  per cent of specified torque.

| Cap Screw<br>Size-Inches | Customary Hardware   |       |   |        |  |        |
|--------------------------|--|-------|---|--------|--|--------|
|                          | <br>Grade B |       | <br>Grade D |        | <br>Grade F |        |
|                          | lb-ft.   | (N-m) | lb-ft.  | (N-m)  | lb-ft.   | (N-m)  |
| 1/4                      | ----   | ----  | 10  | (14)   | 14   | (19)   |
| 5/16                     | ----   | ----  | 20  | (27)   | 30   | (41)   |
| 3/8                      | ----   | ----  | 35  | (47)   | 50   | (68)   |
| 7/16                     | 35   | (47)  | 55  | (75)   | 80   | (108)  |
| 1/2                      | 55   | (75)  | 85  | (115)  | 120  | (163)  |
| 9/16                     | 75   | (102) | 130   | (176)  | 175  | (237)  |
| 5/8                      | 105  | (142) | 170   | (230)  | 240  | (325)  |
| 3/4                      | 185  | (251) | 300   | (407)  | 425  | (576)  |
| 7/8                      | 160  | (217) | 445   | (603)  | 685  | (929)  |
| 1                        | 250  | (339) | 670   | (908)  | 1030   | (1396) |
| 1-1/8                    | 330  | (447) | 910   | (1234) | 1460   | (1979) |
| 1-1/4                    | 480  | (651) | 1250  | (1695) | 2060   | (2793) |

88A;T88884 T82;EXMA S 120684

## TUBE AND HOSE FITTING, 37° FLARE AND 30° CONE SEAT CONNECTOR SERVICE RECOMMENDATIONS

1. Inspect the flare and the flare seat. They must be free of dirt and defects. If repeated leaks occur, inspect for defects with a magnifying glass. If burrs and raised nicks on the connector body cannot be removed with a slip stone, replace the connector.
2. Defects in the tube flare cannot be repaired. Replace the tube. Overtightening a defective flared fitting will not stop leaks.
3. As a field repair, a ductile truncated cone shaped washer can be used between the tube flare and connector body. These washers are soft enough to fill defects in the seat and flare. They will also seal the connection. Ductile washers are available from industrial supply houses.
4. Align the tube with the fitting before attempting to start the nut. Failure to do so can cause a deformed flare and subsequent leaks. Install hoses without twists. A twisted hose attempts to straighten out when pressure is applied. This exerts a torque on the connection, eventually causing failure.
5. Lubricate the connection with hydraulic fluid, petroleum jelly or soap. Tighten the swivel nut by hand until it is snug.
6. Mark a line across the nut and connector body. This line will serve as a visual indicator as to whether the nut has been tightened and by how much.
7. Using two wrenches, one on the connector body and a torque wrench on the nut, tighten the nut to the torque value as shown in the chart. In the case of a hose, it may be necessary to use three wrenches to prevent twisting.

**TUBE AND HOSE FITTING, 37° FLARE AND 30° CONE SEAT CONNECTOR TORQUE**

| Thread<br>Size | Torque <sup>1</sup> |         | New <sup>2</sup> | Used <sup>3</sup> |
|----------------|---------------------|---------|------------------|-------------------|
|                | N·m                 | (lb·ft) | Number of Flats  | Number of Flats   |
| 3/8-24 UNF     | 8                   | (6)     | 2-1/2            | 1                 |
| 7/16-20 UNF    | 12                  | (9)     | 2-1/2            | 1                 |
| 1/2-20 UNF     | 16                  | (12)    | 2-1/2            | 1                 |
| 9/16-18 UNF    | 24                  | (18)    | 2                | 1                 |
| 3/4-16 UNF     | 46                  | (34)    | 2                | 1                 |
| 7/8-14 UNF     | 62                  | (46)    | 1-1/2            | 1                 |
| 1-1/16-12 UN   | 102                 | (75)    | 1                | 3/4               |
| 1-3/16-12 UN   | 122                 | (90)    | 1                | 3/4               |
| 1-5/16-12 UN   | 142                 | (105)   | 3/4              | 3/4               |
| 1-5/8-12 UN    | 190                 | (140)   | 3/4              | 3/4               |
| 1-7/8-12 UN    | 217                 | (160)   | 1/2              | 1/2               |

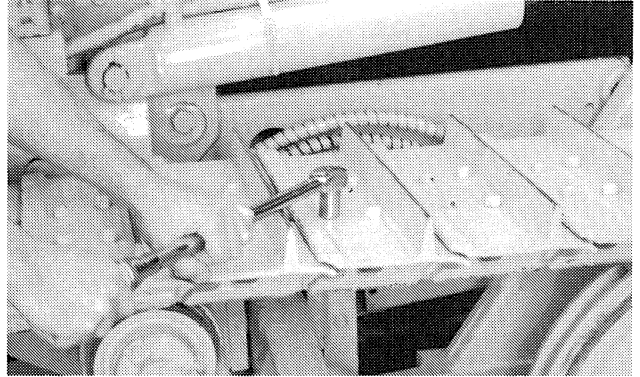
1. Tolerance of  $\pm 10\%$ .
2. To be used if a torque wrench cannot be used. After tightening fitting by hand, put a mark across the fittings, then tighten fitting the number of flats shown.
3. Flare connection seal by deforming or squeezing the tube between the nut and the connector. More deformation is possible with new parts than with old. Therefore, if a torque wrench is not used for re-assembly, the values in this column must be used to prevent damage.

## CHECK TRACK SHOE TORQUE

Track shoe cap screws should be checked periodically for tightness.

Tighten cap screws to 120 lb-ft (163 N·m) torque.

**NOTE:** Replacement hardware should be lubricated and tightened to above specification.



88A;T90698 T82;CRMA AP 240383

## CHECK OIL LINES AND FITTINGS



**CAUTION:** Escaping fluid under pressure can penetrate the skin causing serious injury. Relieve pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Keep hands and body away from pinholes and nozzles which eject fluids under high pressure. Use a piece of cardboard or paper to search for leaks. **DO NOT** use your hand.

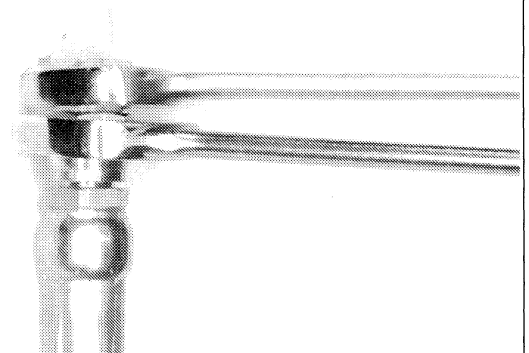
If **ANY** fluid is injected into the skin, it must be surgically removed within a few hours by a doctor familiar with this type injury or gangrene may result.

Check all oil lines, hose and fittings regularly for leaks or defects. Make sure all clamps are in position and tight. Make sure hoses are not twisted or touching machine parts which are moving.

Tubing with defects may cause the oil to heat. If you find tubing with defects, install new tubing immediately.

**IMPORTANT:** Tighten fittings as specified in torque charts.

When you tighten connections, use two wrenches to prevent bending or breaking tubing and fittings.



88A;X9811, T85401 T82;EXMA U 100984

T83;450D P89 100984

## ADJUSTING TRACK SAG

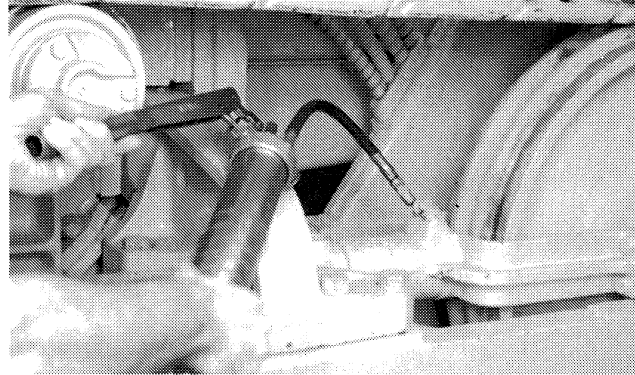


**CAUTION:** When you work near the track adjuster or recoil spring, **USE EXTREME CARE. DO NOT** disassemble parts unless you know the correct procedure and have correct tools.

**IMPORTANT:** The adjustment cylinder has an adjustment fitting on the yoke end and a lubrication fitting on the barrel end. **DO NOT** use the grease fitting on the yoke end for lubrication. Use this fitting **ONLY** for track adjustment. After adjustment has been made, you must apply grease to the lubrication fitting on the barrel end (step 3).

1. To tighten track, connect a grease gun (maximum capacity 8000 psi [55200 kPa]) to the grease fitting on the yoke end of the cylinder (as shown). Add grease until the sag is 7/8 to 1-1/8 inches (22 to 28.5 mm).

**IMPORTANT:** After adding grease, drive the crawler forward and backward several times.

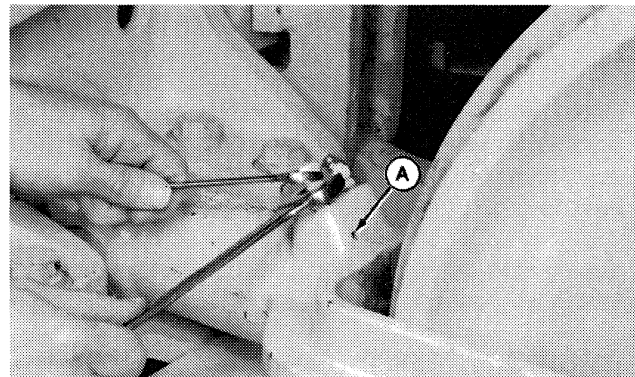


88A;T90694 T82;CRMA BH 050984



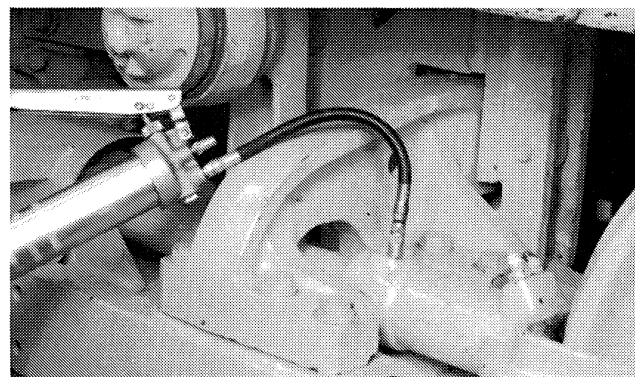
**CAUTION:** The track adjuster cylinder may have high pressure. If grease does not immediately come out of the vent hole (A), drive the crawler forward and backward slowly. Then tighten set screw.

2. To loosen track, turn set screw one to three turns counterclockwise to release pressure until the sag is 7/8 to 1-1/8 inches (22 to 28.5 mm). Tighten the set screw.



88A;T90695 T82;CRMA BI 240383

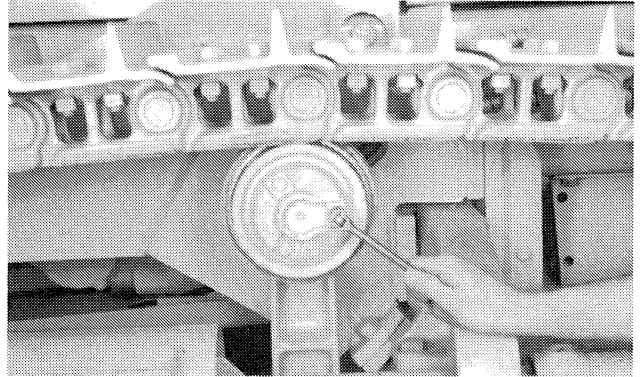
3. **IMPORTANT:** Each time track is adjusted, apply grease to the lubrication fitting on the barrel end of the adjuster until grease escapes past the scraper seal at the end of the barrel.



88A;T90697 T82;CRMA BJ 130984

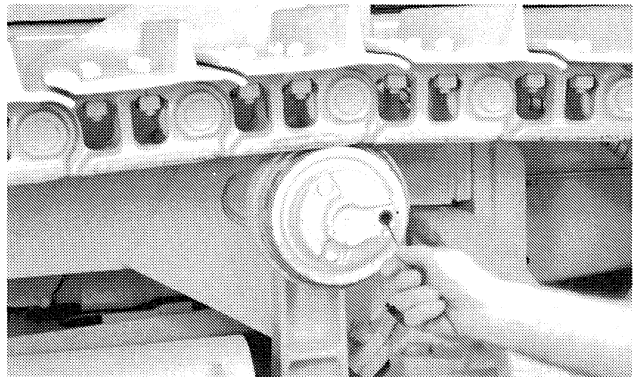
## CHECK TRACK CARRIER ROLLER OIL LEVEL

1. Position the oil level plug of the carrier roller in the three o'clock or nine o'clock position.
2. Remove the oil level plug.



88A;T90917 T82;CRMA BK 080984

3. Oil should be level with plug hole or not more than 1/8 in. (3 mm) below the bottom of the hole. Use a wire with a 1/8 in. (3 mm) right angle bend in it to check oil level.



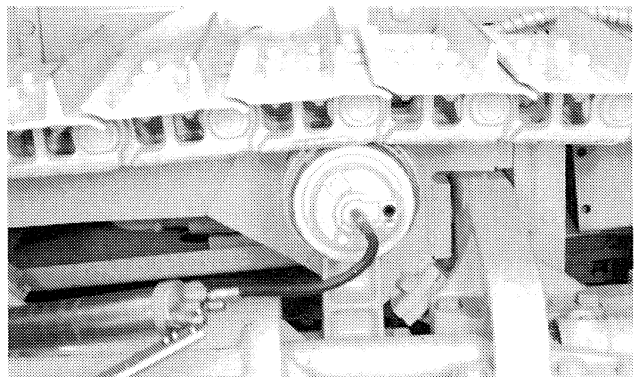
88A;T90918 T82;CRMA BL 240383

## FILL TRACK CARRIER ROLLER

1. To add oil, install the oil level plug.
2. Remove the fill plug and IMMEDIATELY install a 1/8 in. NPT grease fitting.
3. Remove the oil level plug.

T82;CRMA BT 240383

4. Fill a grease gun with oil. (See Fuels and Lubricants specifications in TM-1291, Section I, Group IV.)
5. Add oil to grease fitting until it comes out of oil level plug.
6. Install oil level plug.
7. Remove grease fitting and install fill plug.

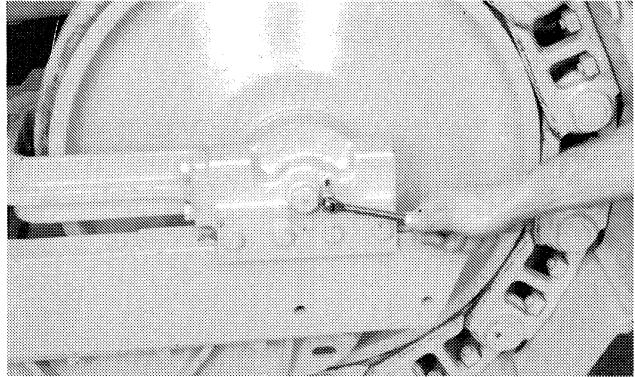


88A;T90919 T82;CRMA BM 100984

T83;450D P91 100984

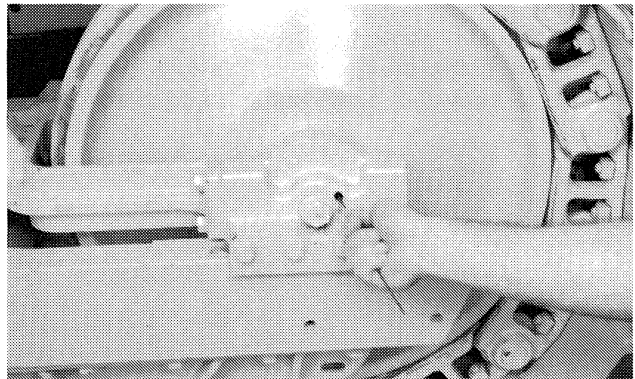
## CHECK FRONT IDLER OIL LEVEL

1. Remove the oil level plug.



88A;T90920 T82;CRMA BN 080984

2. Oil should be level with plug hole or not more than 1/8 in. (3 mm) below the bottom of the hole. Use a wire with a 1/8 in. (3 mm) right angle bend in it to check oil level.



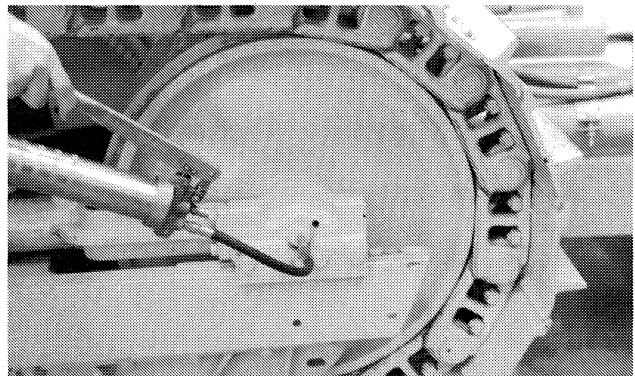
88A;T90921 T82;CRMA BO 240383

## FILL FRONT IDLER

1. To add oil, install the oil level plug.
2. Remove the fill plug and IMMEDIATELY install a 1/8 in. NPT grease fitting.
3. Remove the oil level plug.

T82;CRMA BU 240383

4. Fill a grease gun with oil. (See Fuels and Lubricants specifications in TM-1291, Section, Group IV.)
5. Add oil to grease fitting until it comes out of oil level plug.
6. Install oil level plug.
7. Remove grease fitting and install fill plug.



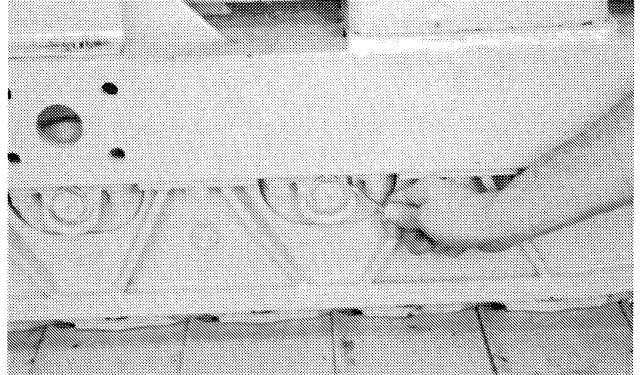
88A;T90922 T82;CRMA BP 100984

T83;450D P92 100984



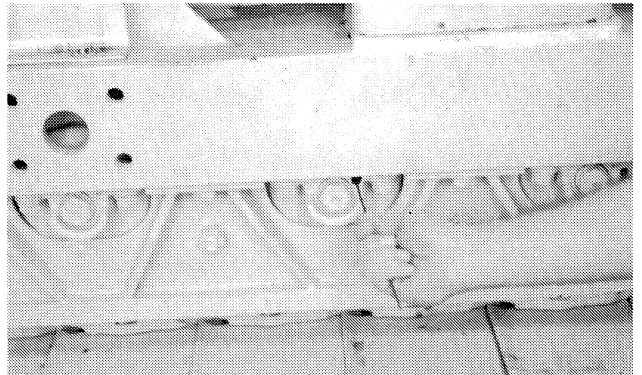
## CHECK TRACK ROLLER OIL LEVEL

1. Remove the oil level plug.



88A:T90923 T82:CRMA BQ 080984

2. Oil should be level with plug hole or not more than 1/8 in. (3 mm) below the bottom of the hole. Use a wire with a 1/8 in. (3 mm) right angle bend in it to check oil level.



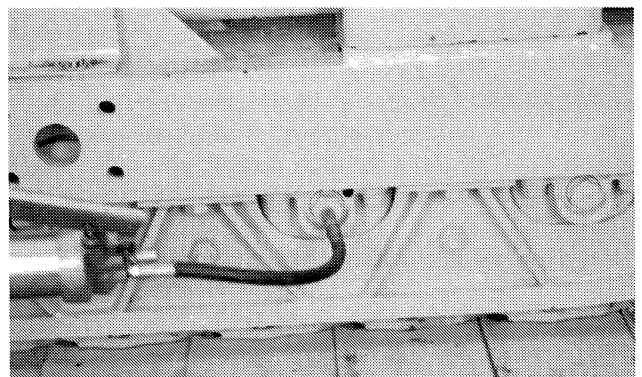
88A:T90924 T82:CRMA BR 240383

## FILL TRACK ROLLER

1. To add oil, install the oil level plug.
2. Remove the fill plug and IMMEDIATELY install a 1/8 in. NPT grease fitting.
3. Remove the oil level plug.

T82:CRMA BV 240383

4. Fill a grease gun with oil specified in Fuels and Lubricants chapter.
5. Add oil to grease fitting until it comes out of oil level plug.
6. Install oil level plug.
7. Remove grease fitting and install fill plug.



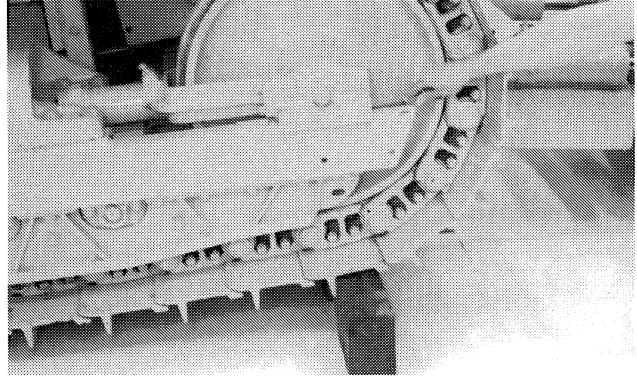
88A:T90925 T82:CRMA BS 130984

T83:4500 P93 100984

## CHECK FRONT IDLER VERTICAL MOVEMENT

Drive machine onto wood block. Make sure block is under front idler.

Use feeler gauge to measure gap between idler bracket and track frame. If gap is more than 0.040 in. (1 mm), see your John Deere dealer.



88A;T90696 T82;CRMA AN 240383

## CHECK FIRE EXTINGUISHER—IF EQUIPPED

**IMPORTANT:** Charge the extinguisher after each use.

Check gauge regularly for correct charge. The pointer should be in the green zone. If the extinguisher needs a charge, see your John Deere dealer.

T82;CRMA AQ 130984

## CHECK SEAT BELT

Regularly inspect condition of seat belt and mounting hardware.



88A;T90700 T82;CRMA AR 080984

## ADJUSTING STEERING BRAKES

**IMPORTANT:** Brakes are self-adjusting and should stay in adjustment. If you use too much force on pedals or levers, you may take brakes out of adjustment.

If brakes will not release, see your John Deere dealer..

If brakes are too loose or too tight:

1. Remove plug on side which needs adjusting.



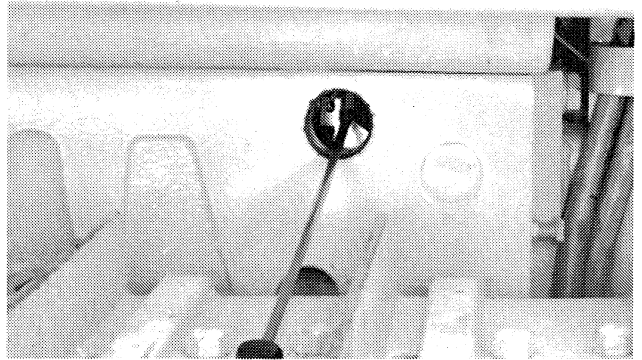
88A;T90701 T82;CRMA AS 080984

T83;450D P94 100984

2. To tighten the right brake, turn the brake band adjusting nut up with a screwdriver. To loosen the right brake, turn the adjusting nut down.

To tighten the left brake, turn the adjusting nut down. To loosen the left brake, turn the adjusting nut up.

3. Install plug



88A;T90702 CRMA AT 080984

## STEERING CLUTCH ADJUSTMENT

Steering clutches need no adjustment. If crawler does not steer correctly, see your John Deere dealer.

T82;CRMA AV 140383

## DO NOT SERVICE CONTROL VALVES AND CYLINDERS

Special tools and information are needed to service control valves and cylinders.

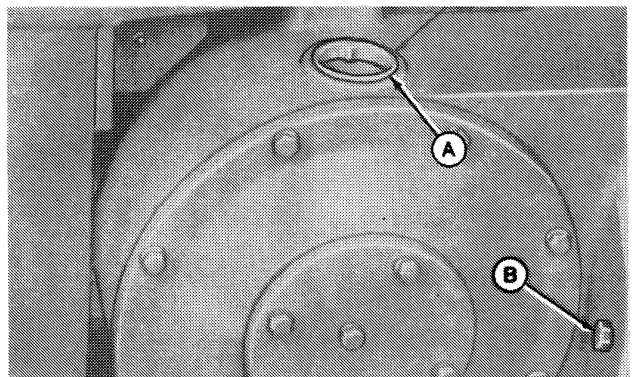
If these parts need service, see your John Deere dealer.

T82;BHMA K 270882

## CHECK WINCH OIL LEVEL

Check oil level approximately every 50 hours.

1. Remove oil level plug (B). Oil must be at bottom of oil level hole.
2. If oil is needed, remove filler plug (A).
3. Add oil specified in Fuels and Lubricants chapter.
4. Install plugs.

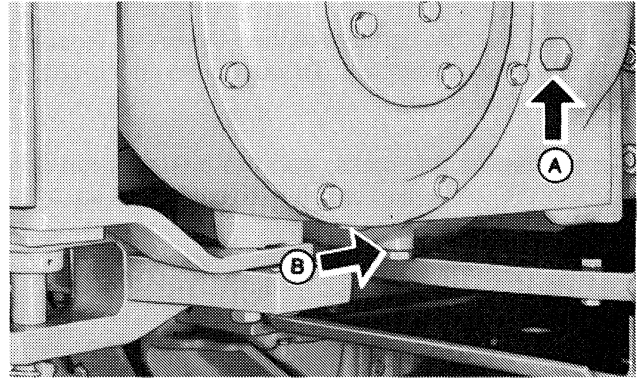


88A;T90665 T82;CRMA DR 080984

## CHANGE WINCH OIL AND FILTER

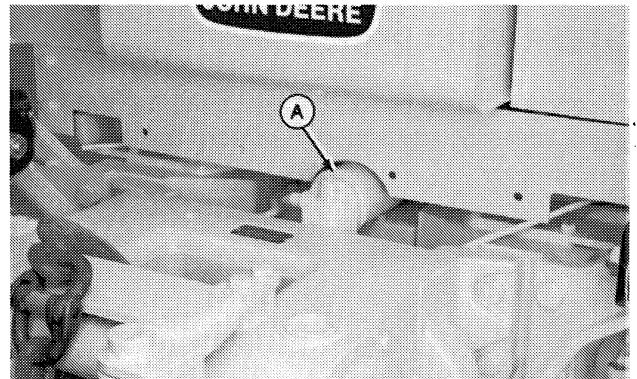
Change oil and filter approximately every 500 hours.

1. Remove drain plug (B).
2. Drain oil from housing.
3. Install drain plug.
4. Fill winch to bottom of oil level hole (A) with 9 qt (8.5 L) of oil specified in Fuels and Lubricants chapter.



88A;T60202 T82;CRMA DQ 130984

5. Remove oil filter (A).
6. Clean mounting surface.
7. Apply thin film of oil to gasket of new filter.
8. Install new filter. Turn filter clockwise by hand until gasket touches mounting surface.



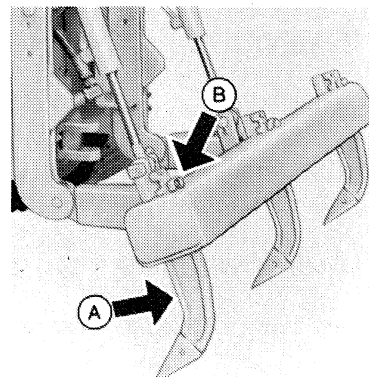
88A;T5935AW T82;CRMA HC 080984

9. Tighten 1/2 to 3/4 turn more.
10. Start engine. Operate winch.
11. Check for leaks around filter. Tighten filter only enough to stop leaks.
12. Stop engine. Check oil level.

T82;CRMA BA 140383

## CHANGE RIPPER TEETH

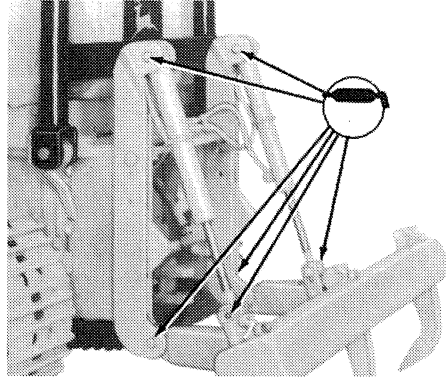
1. Remove shank lock (B).
2. Remove tooth (A).
3. Install new tooth to correct depth.
4. Install shank lock.



88A;T60149 T82;CRMA BB 140383

## GREASE RIPPER

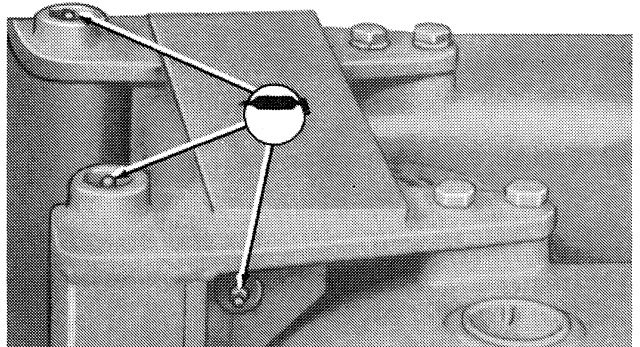
Lubricate daily, if necessary, with grease specified in Fuels and Lubricants chapter.



88A;T90663 T82;CRMA BC 140383

## GREASE WINCH FAIRLEAD

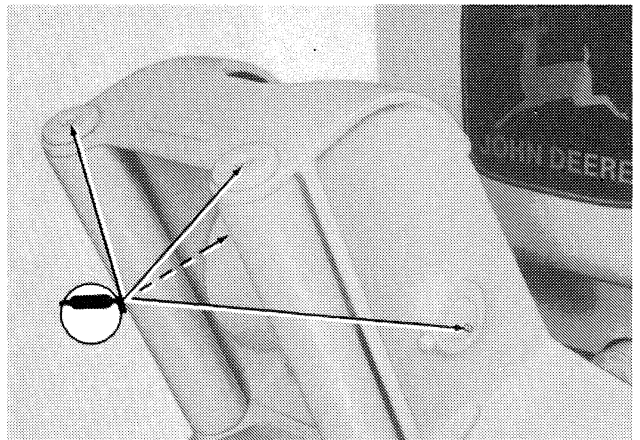
If necessary, lubricate daily with grease specified in Fuels and Lubricants chapter.



88A;T90674 T82;CRMA BD 140383

## GREASE LOG ARCH

Lubricate daily, if necessary, with grease specified in Fuels and Lubricants chapter.



88A;T90664 T82;CRMA BE 110483

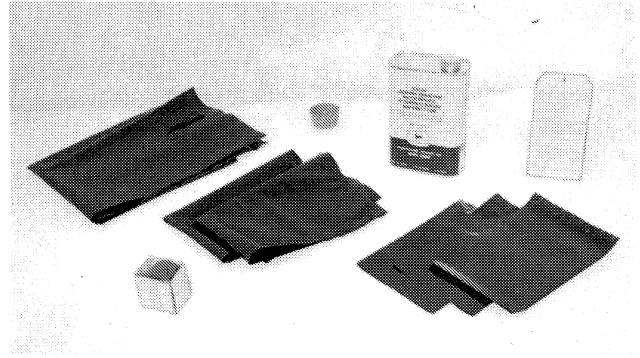
# Storage

## USING ENGINE STORAGE KIT

See your John Deere dealer for an Engine Storage Protection Kit (AR41785) or equivalent.

Follow directions on the tag in this kit.

**IMPORTANT:** Inhibitor easily changes to gas. Seal or tape an opening immediately after you use inhibitor.



88A;T85452 T82;EXST A 100382

## STORING THE MACHINE

1. Repair worn or damaged parts. Install new parts, if necessary to avoid needless delays later.
2. Loosen the alternator-fan belt.
3. Clean the primary air cleaner element.
4. Wash the machine. Paint areas to prevent rust and replace decals where needed.
5. Remove seat cushion and other perishable items.
6. Retract all hydraulic cylinders, if possible. If not, coat exposed cylinder rods with multi-purpose grease.
7. Lubricate all grease points.
8. Apply waste oil to track chains. Run machine back and forth several times. Park on a hard surface to prevent tracks from freezing to the ground.
9. Store machine in a dry protected place. If it is stored outside, cover the machine with a waterproof material.
10. If machine will be stored more than 30 days, remove battery and store it in a cool, dry place not subject to freezing. Check electrolyte level and charge fully. Check batteries in storage every 30 days and charge them if necessary.

T82;CRST A 310884

## REMOVE THE MACHINE FROM STORAGE



**CAUTION:** Start engine **ONLY** in a well-ventilated place.

1. Follow instructions on the tag of the Engine Storage Protection Kit.

2. Remove grease from cylinder rods.

3. Adjust alternator-fan belt.

4. Fill fuel tank. Bleed fuel system.

5. Pre-lubricate turbocharger bearings as follows:

Remove fuel shut-off fuse. Turn engine crankshaft until engine oil pressure gauge needle moves off left index mark. Do not operate starting motor more than 20 seconds at a time. Wait 2 minutes between attempts.

After needle moves off left index mark, install fuse.

Start engine.

Run engine several minutes at half speed before you operate it under full load.

6. Cycle all hydraulic functions several times.

7. Carefully check all systems before you operate the machine under load.

*NOTE: After extended storage follow these steps.*

1. Check condition of all hoses and connections.

2. Warm the engine.

3. Stop the engine.

4. Install new fuel filters. Bleed fuel system.



# Crime Prevention Tips

## GOOD ADVICE

Keep your machine damage-free and YOURS!

Follow the advice on these pages to reduce vandalism, discourage theft, and help recover your machine if it is stolen.

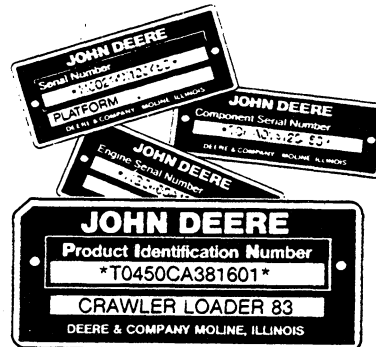
**TAKE A BITE OUT OF  
CRIME**  
© 1979 The Advertising Council, Inc.



44A/TS140 T82/EXCP A 190684

## RECORD IDENTIFICATION NUMBERS

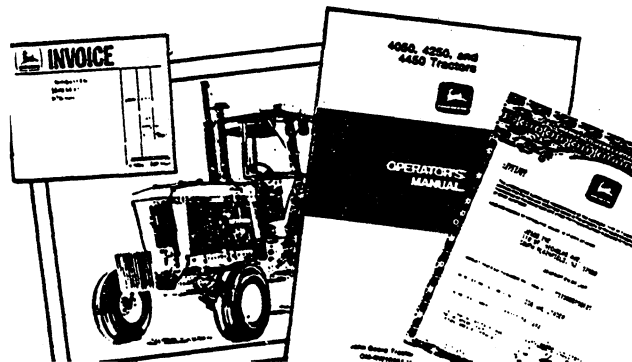
1. Record Product Identification Number (PIN) of unit and identification numbers of engine, component, attachment, etc. EXACTLY as they appear on the plates.
2. Check that the complete and correct numbers appear on all documentation (insurance, financial, warranty, manufacturer's certificate of origin, etc.). Keep all documents in a safe location.
3. If available, participate in an "Owner Applied Numbering Program" and mark your own machines.



44A/TS156 T82/EXCP B 190684

## MAINTAIN DOCUMENTED PROOF OF OWNERSHIP

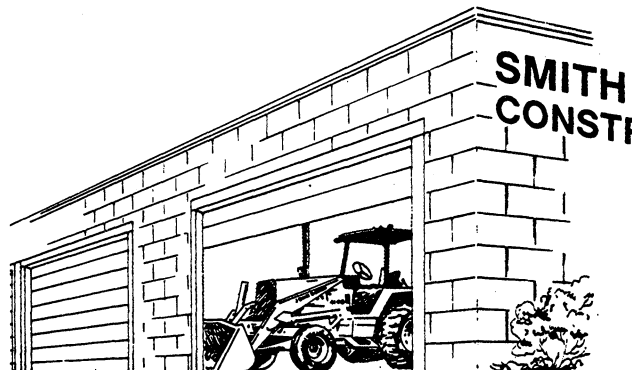
1. Keep in a safe location all documents (invoices, warranty cards, manufacturer's certificate of origin, if available, etc.) that accompanied your machines at the time of purchase.
2. Take color photographs of each machine from several angles.
3. Maintain an up-to-date inventory of all machines. Check regularly to insure no machines have been stolen.



44A/TS157 T82/EXCP C 190684

## PARK INDOORS OUT OF SIGHT

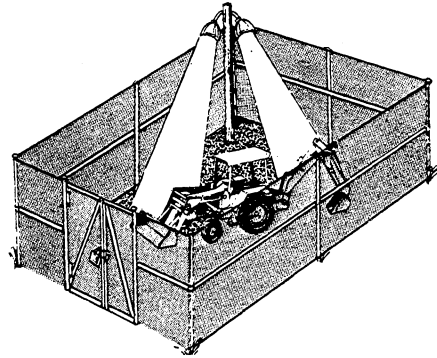
1. Lower all equipment making the machine harder to move.
2. Remove ignition key. If so equipped, lock cab doors, windows and any vandal protection devices. Place hard-to-move equipment in front of exits.
3. If machine is being stored, remove the battery or any essential component in the electrical system.
4. Set wheels in widest position making loading more difficult. Secure all openings to storage buildings.



44A/TS158 T82/EXCP D 190684

## PARKING OUTDOORS

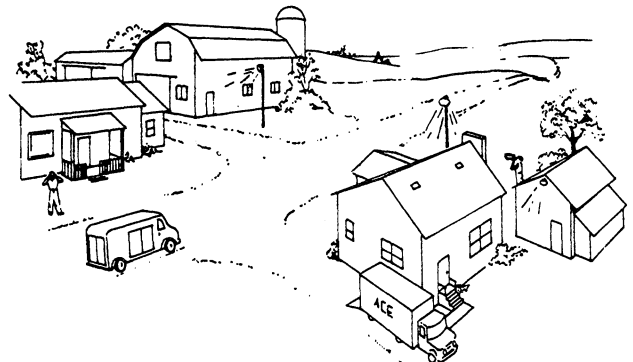
1. Park machine in a fenced, well-lighted, locked area. Lower equipment, remove ignition key and lock cab doors, windows, and any vandal protection devices if so equipped.
2. Make law enforcement aware of your presence in an area and provide them with a contact person to assist them in dealing with suspicious activity.
3. Solicit assistance from neighbors or merchants who permanently reside near the parking area.



44A;TS144 T82;EXCP E 190684

## REDUCE VANDALISM

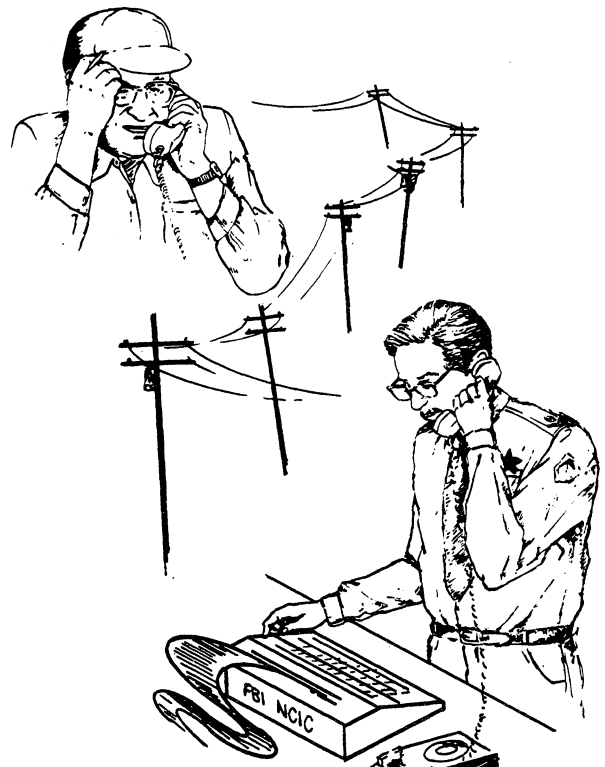
1. Install vandal protection devices especially if parking machine in high-risk areas.
2. Solicit assistance for watching machine from individuals residing in the area.
3. Take written notes and report to law enforcement all suspicious vehicles or persons.
4. Participate in a "Neighborhood Watch Program."



44A;TS159 T82;EXCP F 190684

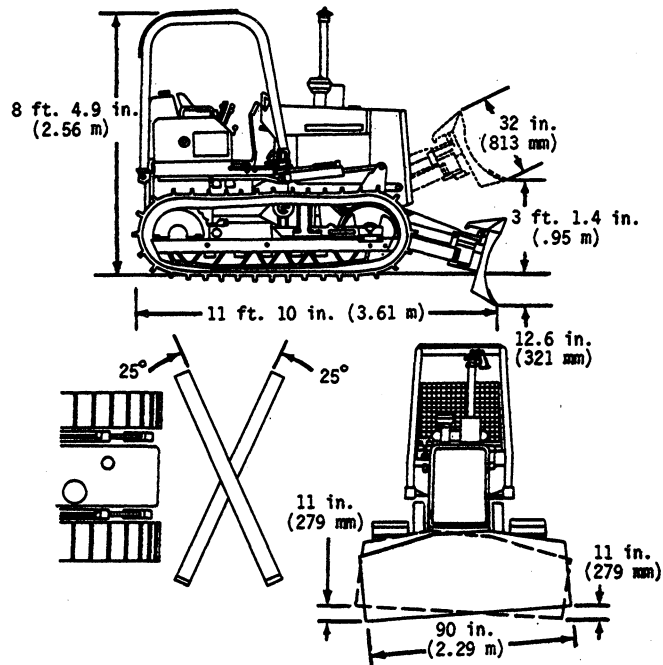
## REPORT THEFT

1. If a theft occurs, notify the law enforcement agency having jurisdiction and the insurance carrier immediately.
2. Give a full description and a complete identification number(s) to the investigating officer and insurance carrier.
3. If available, provide the investigating officer with photographs of the actual machine, manufacturer's literature and knowledge of any identifiable marks that would assist in identifying the machine.
4. Ask for verification that the stolen machine has been entered into the National Crime Information Center (NCIC) operated by the FBI in Washington D.C.
5. Notify your John Deere dealer of the theft and request that, if possible, a notice be posted that provides the description and identification information.
6. Regularly check the identification plates on all machines and report any removed plates to law enforcement immediately. Promptly contact your dealer and order a duplicate identification plate.



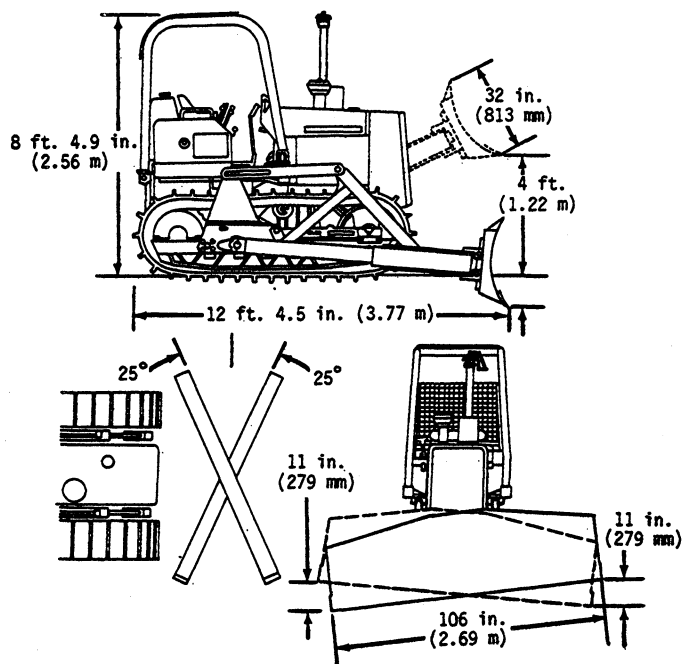
44A;TS146 T82;EXCP G 190684

# Specifications



**450D Crawler Dozer With 6405 Blade**

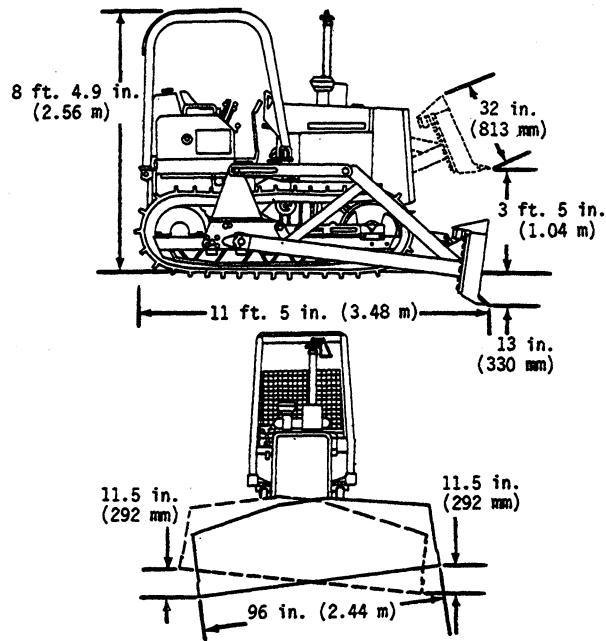
88A;T90425 T82;CRSP A 080984



**450D Crawler Dozer With 6410 Blade**

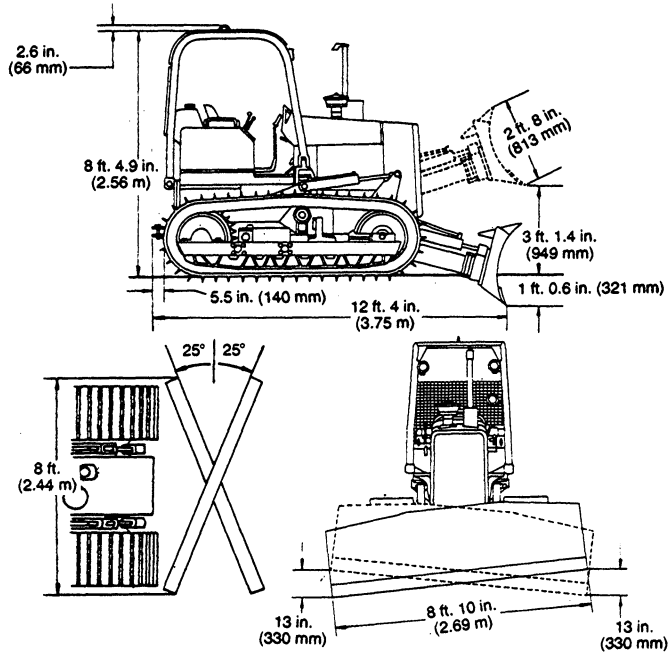
88A;T90426 T82;CRSP C 250283

## Specifications



**450D Crawler Dozer With 6415 Blade**

88A;T90427 T82;CRSP D 250283



**450D Wide Track**

88A;T5936AA T82;CRSP R 080984

## CAPACITIES

|  | U.S.          | Metric              |
|--|---------------|---------------------|
| Engine coolant .....                               | 4 gal .....   | 15.0 L              |
| Engine oil including filter .....                  | 9 qt .....    | 8.5 L               |
| Transmission .....                                 | 8 gal .....   | 30.3 L              |
| Final drive (each side) .....                      | 6.25 qt ..... | 5.9 L               |
| Hydraulic reservoir .....                          | 6 gal .....   | 22.7 L              |
| Hydraulic system:                                  |               |                     |
| (6405 dozer) .....                                 | 9.5 gal ..... | 36.0 L              |
| (6410 dozer) .....                                 | 8.5 gal ..... | 32.2 L              |
| (6415 dozer) .....                                 | 8.5 gal ..... | 32.2 L              |
| Steering clutch housing (each side) .....          | 7 gal .....   | 26.5 L              |
| Fuel tank .....                                    | 31 gal .....  | 117.3 L             |
| SAE Operating Weight:                              |               |                     |
| 16 in. (406 mm) grouser shoes .....                |               | 12,260 lb (5560 kg) |
| 6405 dozer and 16 in. (406 mm) grouser shoes ..... |               | 14,640 lb (6640 kg) |
| 6410 dozer and 18 in. (457 mm) grouser shoes ..... |               | 14,830 lb (6727 kg) |
| 6415 dozer and 18 in. (457 mm) grouser shoes ..... |               | 15,240 lb (6913 kg) |

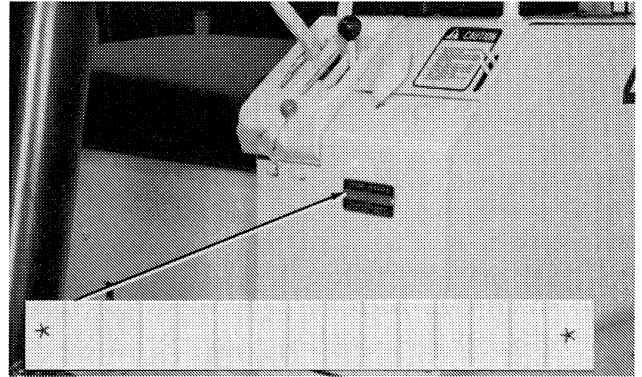
(Specifications and design subject to change without notice. Wherever applicable, specifications are in accordance with ICED and SAE Standards. Except where otherwise noted, these specifications are based on a unit with roll-over protective structure and standard equipment.)

T82/CRSP B 130984

# Machine Numbers

## RECORD PRODUCT IDENTIFICATION NUMBER

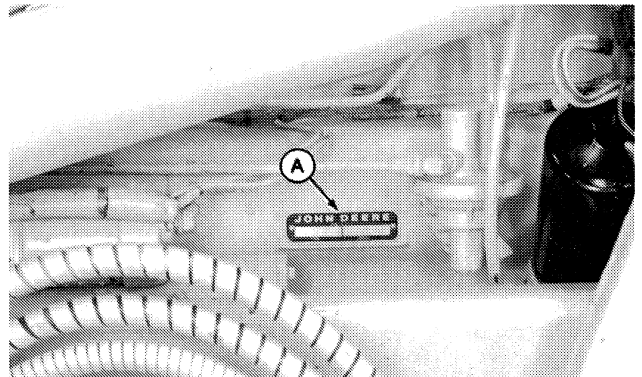
Purchase Date \_\_\_\_\_



88A;T5933BD T82;CRMN A 080984

## RECORD ENGINE SERIAL NUMBER

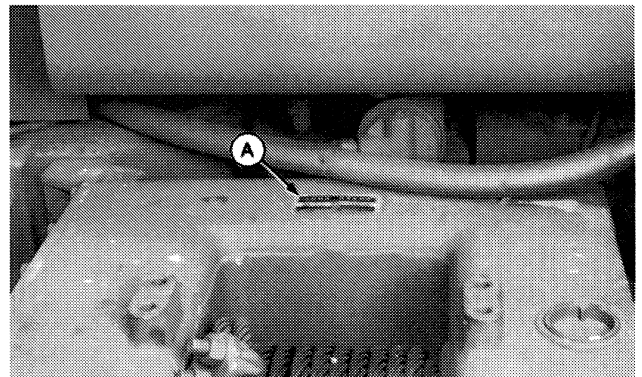
Engine Serial Number (A) \_\_\_\_\_



88A;T90667 T82;CRMN B 100383

## RECORD WINCH SERIAL NUMBER

Winch Serial Number (A) \_\_\_\_\_



88A;T90668 T82;CRMN C 100383

# Alphabetical Index

## A

|                                  |    |
|----------------------------------|----|
| Adjustment:                      |    |
| Belt tension .....               | 46 |
| Engine valve clearance .....     | 60 |
| Seat .....                       | 20 |
| Air cleaner elements .....       | 74 |
| Air filter elements .....        | 74 |
| Air intake hose .....            | 54 |
| Air restriction indicator .....  | 46 |
| Alternator and regulator .....   | 86 |
| Alternator belt adjustment ..... | 46 |
| Antifreeze .....                 | 80 |
| Arch, log .....                  | 97 |
| Attachments chapter .....        | 34 |

## B

|                                      |       |
|--------------------------------------|-------|
| Battery:                             |       |
| Booster .....                        | 17    |
| Charger .....                        | 82    |
| Electrolyte level .....              | 52    |
| Electrolyte specific gravity .....   | 82    |
| Replacement .....                    | 82    |
| Service .....                        | 81    |
| Belt:                                |       |
| Seat, check .....                    | 94    |
| Tension adjustment, fan .....        | 46    |
| Blade:                               |       |
| Control lever, location .....        | 10    |
| Control lever 6405, operating .....  | 27    |
| Control lever 6410, operating .....  | 29    |
| Control lever 6415, operating .....  | 31    |
| Control lever pivot, lubricate ..... | 52    |
| Bleeding fuel system .....           | 55    |
| Booster battery .....                | 17    |
| Brake:                               |       |
| Lock lever, operation .....          | 14    |
| Parking, operation .....             | 20    |
| Pedal, location .....                | 10    |
| Pedal, operation .....               | 20    |
| Brakes, steering adjustment .....    | 94,95 |
| Break In chapter .....               | 12    |
| Breaker, circuit, resetting .....    | 86    |
| Breather tube, engine .....          | 58    |
| Bulldozer:                           |       |
| Control lever, oil .....             | 52    |
| Operating 6405 .....                 | 27    |
| Operating 6410 .....                 | 29    |
| Operating 6415 .....                 | 31    |
| Bypass starting .....                | 4     |

## C

|  |          |
|--|----------|
| Capacities .....                       | 104      |
| Carrier roller oil specification ..... | 42       |
| Charger, battery .....                 | 82       |
| Cigar lighter:                         |          |
| Location .....                         | 11       |
| Operation .....                        | 26       |
| Circuit breaker, resetting .....       | 86       |
| Clutch:                                |          |
| Adjustment, steering .....             | 94,95    |
| Pedal free travel .....                | 47       |
| Pedal, location .....                  | 10       |
| Cold weather:                          |          |
| Operation .....                        | 43       |
| Starting aid, booster battery .....    | 17       |
| Starting aid, starting fluid .....     | 16       |
| Conditioner, coolant .....             | 54       |
| Control lever, oil bulldozer .....     | 52       |
| Control valves .....                   | 95       |
| Controls:                              |          |
| Engine speed .....                     | 15       |
| Location .....                         | 10       |
| Coolant:                               |          |
| Conditioner .....                      | 54       |
| Freeze protection .....                | 80       |
| Heater, engine .....                   | 8        |
| Hoses .....                            | 80       |
| Level, engine .....                    | 49       |
| Cooling System Service .....           | 78       |
| Crankcase ventilation tube .....       | 58       |
| Crime prevention tips .....            | 100, 101 |
| Cylinders .....                        | 95       |

## D

|                                   |                    |
|-----------------------------------|--------------------|
| Diesel fuel specifications .....  | 38                 |
| Directions, machine .....         | Inside front cover |
| Drain, fuel tank .....            | 46                 |
| Driving the Crawler chapter ..... | 20                 |

*Continued on next page*



**E**

|                                 |    |
|---------------------------------|----|
| Electrolyte:                    |    |
| Level, battery .....            | 52 |
| Specific gravity .....          | 82 |
| Elements, air filter .....      | 74 |
| Emergency stopping .....        | 19 |
| Engine:                         |    |
| Break-in .....                  | 12 |
| Breather tube .....             | 58 |
| Oil change .....                | 52 |
| Oil filter .....                | 53 |
| Oil level .....                 | 49 |
| Oil, specifications .....       | 39 |
| Operating chapter .....         | 14 |
| Speeds .....                    | 65 |
| Starting .....                  | 14 |
| Stopping .....                  | 18 |
| Valve clearance .....           | 60 |
| Warm up .....                   | 18 |
| Extinguisher charge, fire ..... | 94 |

**F**

|                                  |    |
|----------------------------------|----|
| Fairlead, winch .....            | 97 |
| Fan belt adjustment .....        | 46 |
| Filter:                          |    |
| Elements, air .....              | 74 |
| Engine oil .....                 | 53 |
| Fuel, change .....               | 55 |
| Fuel drain .....                 | 71 |
| Oil, hydraulic system .....      | 54 |
| Transmission oil, change .....   | 55 |
| Winch, change .....              | 96 |
| Final drives:                    |    |
| Oil change .....                 | 60 |
| Oil level .....                  | 53 |
| Oil specification .....          | 41 |
| Fire extinguisher charge .....   | 94 |
| Fire hazards .....               | 2  |
| Freeze protection, coolant ..... | 80 |
| Front idler:                     |    |
| Oil level .....                  | 92 |
| Oil specification .....          | 42 |
| Vertical movement .....          | 94 |

**F**

|                                    |    |
|------------------------------------|----|
| Fuel:                              |    |
| Filter change .....                | 55 |
| Filter, drain .....                | 71 |
| Injection nozzles .....            | 71 |
| Injection pump .....               | 71 |
| Specifications .....               | 38 |
| Storage .....                      | 38 |
| System bleeding .....              | 55 |
| Tank drain .....                   | 46 |
| Tank outlet screen .....           | 72 |
| Fuels and Lubricants chapter ..... | 38 |

**G**

|                                |    |
|--------------------------------|----|
| Gauges:                        |    |
| After-starting .....           | 18 |
| Location .....                 | 9  |
| Grease:                        |    |
| Fitting, log arch .....        | 97 |
| Fitting, ripper .....          | 97 |
| Fitting, winch fairlead .....  | 97 |
| Fittings, 6405 bulldozer ..... | 50 |
| Fittings, 6410 bulldozer ..... | 51 |
| Fittings, 6415 bulldozer ..... | 51 |
| Specification .....            | 43 |

**H**

|                                  |    |
|----------------------------------|----|
| H-L-R lever operation .....      | 21 |
| Hardware torque chart .....      | 87 |
| High pressure fluid safety ..... | 4  |
| Hose, air intake .....           | 54 |
| Hoses, coolant .....             | 80 |
| Hot wiring .....                 | 5  |
| Hour meter .....                 | 45 |
| Hydraulic oil:                   |    |
| Filter change .....              | 54 |
| Change .....                     | 57 |
| Level .....                      | 48 |
| Specification .....              | 40 |

*Continued on next page*

**I**

|                                   |    |
|-----------------------------------|----|
| Indicator, air restriction .....  | 46 |
| Indicators, location .....        | 9  |
| Injection:                        |    |
| Nozzles .....                     | 71 |
| Pump .....                        | 71 |
| Inspection, pre-start .....       | 13 |
| Instruments, after starting ..... | 18 |

**J-K-L**

|   |    |
|---|----|
| Lever:                                      |    |
| 6405 blade control, operating .....         | 27 |
| 6410 blade control, operating .....         | 29 |
| 6415 blade control, operating .....         | 31 |
| Brake lock, operating .....                 | 14 |
| H-L-R operation .....                       | 21 |
| Locations .....                             | 10 |
| Speed control, operation .....              | 15 |
| Steering, operation .....                   | 22 |
| Winch control, operating .....              | 34 |
| Lighter, cigar, location .....              | 11 |
| Lights, operation .....                     | 25 |
| Loading machine on trailer .....            | 36 |
| Log arch .....                              | 97 |
| Lubricant storage .....                     | 44 |
| Lubrication:                                |    |
| Grease fittings ..... (see Grease Fittings) |    |
| Special conditions .....                    | 44 |

**M**

|                                     |     |
|-------------------------------------|-----|
| Machine:                            |     |
| Directions ..... Inside front cover |     |
| Numbers .....                       | 105 |
| Storage .....                       | 98  |
| Maintenance chapter .....           | 71  |

**N**

|                                  |    |
|----------------------------------|----|
| Neutral start system check ..... | 85 |
| Noise protection .....           | 4  |

**O**

|                                      |    |
|--------------------------------------|----|
| Oil bulldozer control lever .....    | 52 |
| Oil change:                          |    |
| Engine .....                         | 52 |
| Final drives .....                   | 60 |
| Hydraulic .....                      | 57 |
| Transmission-steering clutch .....   | 58 |
| Winch .....                          | 96 |
| Oil, engine break-in .....           | 12 |
| Oil filter:                          |    |
| Engine, change .....                 | 53 |
| Hydraulic, change .....              | 54 |
| Transmission, change .....           | 56 |
| Oil level:                           |    |
| Front idler .....                    | 92 |
| Hydraulic .....                      | 48 |
| Engine .....                         | 49 |
| Final drives .....                   | 53 |
| Track carrier roller .....           | 91 |
| Track roller .....                   | 93 |
| Transmission-steering clutches ..... | 49 |
| Winch .....                          | 95 |
| Oil lines and fittings, check .....  | 89 |
| Oil specification:                   |    |
| Carrier roller .....                 | 42 |
| Engine .....                         | 39 |
| Final drive .....                    | 41 |
| Front idler .....                    | 42 |
| Hydraulic .....                      | 40 |
| Track roller .....                   | 42 |
| Transmission-steering clutches ..... | 40 |
| Winch .....                          | 42 |
| Operate:                             |    |
| Bulldozer 6405 .....                 | 27 |
| Bulldozer 6410 .....                 | 29 |
| Bulldozer 6415 .....                 | 31 |
| Operating:                           |    |
| Suggestions .....                    | 32 |
| The engine chapter .....             | 14 |
| The crawler chapter .....            | 27 |
| Ripper .....                         | 34 |
| Winch .....                          | 34 |
| Operator's station chapter .....     | 9  |

## P-Q

|                                    |    |
|------------------------------------|----|
| Parking:                           |    |
| Brake operation .....              | 21 |
| Machine .....                      | 23 |
| Pedal, clutch, free travel .....   | 47 |
| Pedals:                            |    |
| Location .....                     | 10 |
| Steering .....                     | 22 |
| Periodic maintenance:              |    |
| Chart location .....               | 45 |
| As required .....                  | 46 |
| Daily or every 10 hours .....      | 48 |
| 200 hours .....                    | 52 |
| 500 hours .....                    | 54 |
| 1000 hours .....                   | 57 |
| Precleaner .....                   | 47 |
| Pre-start inspection chapter ..... | 13 |

## R

|   |    |
|---|----|
| Radiator coolant level .....                | 49 |
| Regulator and alternator .....              | 86 |
| Ripper:                                     |    |
| Operating .....                             | 34 |
| Teeth .....                                 | 96 |
| Tooth installation .....                    | 96 |
| Roll-over protective structure (ROPS) ..... | 8  |
| Rust inhibitor .....                        | 54 |

## S

|                                |     |
|--------------------------------|-----|
| Safety:                        |     |
| Chapter .....                  | 2   |
| Coolant heater .....           | 8   |
| Fire .....                     | 2   |
| High pressure fluids .....     | 5   |
| Noise .....                    | 4   |
| Operation .....                | 5   |
| Service .....                  | 4   |
| Starting engine .....          | 5   |
| Starting fluid .....           | 3   |
| Sag:                           |     |
| Track, adjustment .....        | 90  |
| Track, check .....             | 47  |
| Screen, fuel tank outlet ..... | 72  |
| Seat:                          |     |
| Adjustment .....               | 20  |
| Belt, check .....              | 94  |
| Serial numbers .....           | 105 |
| Shield:                        |     |
| Vandal, location .....         | 11  |
| Vandal, lock .....             | 23  |

## S

|   |       |
|---|-------|
| Shift lever operation, transmission ..... | 21    |
| Shipping specifications .....             | 37    |
| Shoe, track torque .....                  | 89    |
| Specifications:                           |       |
| Chapter .....                             | 102   |
| Fuel .....                                | 38    |
| Shipping .....                            | 37    |
| Speed:                                    |       |
| Engine .....                              | 65    |
| Travel .....                              | 21    |
| Starting:                                 |       |
| Engine .....                              | 14    |
| Fluid safety .....                        | 3     |
| Fluid starting aid .....                  | 16    |
| Steering:                                 |       |
| Brakes, adjustment .....                  | 94,95 |
| Clutch, adjustment .....                  | 95    |
| Clutch, oil change .....                  | 58    |
| Clutches, oil specification .....         | 40    |
| Lever operation .....                     | 22    |
| Pedal operation .....                     | 22    |
| Stopping:                                 |       |
| Emergency .....                           | 19    |
| Engine .....                              | 18    |
| Storage:                                  |       |
| Chapter .....                             | 98    |
| Fuel .....                                | 38    |
| Lubricants .....                          | 44    |
| Machine .....                             | 98    |
| Suggestions, operating .....              | 32    |
| Switches, location .....                  | 9     |

## T-U

|  |    |
|--|----|
| Tank:                                    |    |
| Drain, fuel .....                        | 46 |
| Fuel outlet screen .....                 | 72 |
| Teeth, ripper .....                      | 96 |
| Tension adjustment, belts .....          | 46 |
| Torque:                                  |    |
| Chart, standard hardware .....           | 87 |
| Track shoe .....                         | 89 |
| Towing .....                             | 37 |
| Track:                                   |    |
| Carrier roller oil level .....           | 91 |
| Front idler oil level .....              | 92 |
| Front idler vertical movement .....      | 94 |
| Roller oil level .....                   | 93 |
| Roller oil specification .....           | 42 |
| Sag adjustment .....                     | 90 |
| Sag check .....                          | 47 |
| Shoe torque .....                        | 89 |
| Transmission-steering clutch:            |    |
| Oil change .....                         | 58 |
| Oil filter change .....                  | 56 |
| Oil level .....                          | 49 |
| Oil specification .....                  | 40 |
| Transmission shift lever operation ..... | 21 |
| Transporting chapter .....               | 36 |
| Travel speeds .....                      | 21 |
| Trouble shooting chapter .....           | 66 |

## V

|                                |    |
|--------------------------------|----|
| Valve clearance, engine .....  | 60 |
| Valves, control .....          | 95 |
| Vandal shield:                 |    |
| Location .....                 | 11 |
| Lock .....                     | 23 |
| Ventilation tube, engine ..... | 58 |

## W-X-Y-Z

|                                    |                    |
|------------------------------------|--------------------|
| Warranty .....                     | Inside front cover |
| Warm up engine .....               | 18                 |
| Water:                             |                    |
| Battery level .....                | 52                 |
| Cooling system .....               | 78                 |
| Winch:                             |                    |
| Control level, operating .....     | 34                 |
| Fairlead .....                     | 97                 |
| Filter change .....                | 96                 |
| Oil change .....                   | 96                 |
| Oil level .....                    | 95                 |
| Oil specification .....            | 42                 |
| Operating .....                    | 34                 |
| Window:                            |                    |
| Rear, operating .....              | 26                 |
| Side, operating .....              | 26                 |
| Windshield wipers, operating ..... | 26                 |





**PRE-DELIVERY INSPECTION (PDI),  
AFTER-SALE INSPECTION (ASI)**

**MACHINE NUMBERS**

Product Identification Number \_\_\_\_\_ Winch Serial Number \_\_\_\_\_

Engine Serial Number \_\_\_\_\_

**PRE-DELIVERY INSPECTION  
(Required Before Delivery of Machine to Owner)**

Delivered by \_\_\_\_\_ Owner's Name \_\_\_\_\_

Dealer \_\_\_\_\_ Owner's Address \_\_\_\_\_

Date \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

**AFTER-SALE INSPECTION  
(Required During 50 to 100 Hours of Operation)**

Machine Hours \_\_\_\_\_ Owner's Name \_\_\_\_\_

Inspected By \_\_\_\_\_ Owner's Address \_\_\_\_\_

Inspector's Signature \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Dealership \_\_\_\_\_ Owner's Signature \_\_\_\_\_

Litho in U.S.A.

T82;CRPD BJ 300884

T83;450D DLR1 100984

**Dealer Copy 1**





**PRE-DELIVERY INSPECTION (PDI),  
AFTER-SALE INSPECTION (ASI)**

**MACHINE NUMBERS**

Product Identification Number \_\_\_\_\_ Winch Serial Number \_\_\_\_\_

Engine Serial Number \_\_\_\_\_

**PRE-DELIVERY INSPECTION  
(Required Before Delivery of Machine to Owner)**

Delivered by \_\_\_\_\_ Owner's Name \_\_\_\_\_

Dealer \_\_\_\_\_ Owner's Address \_\_\_\_\_

Date \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

**AFTER-SALE INSPECTION  
(Required During 50 to 100 Hours of Operation)**

Machine Hours \_\_\_\_\_ Owner's Name \_\_\_\_\_

Inspected By \_\_\_\_\_ Owner's Address \_\_\_\_\_

Inspector's Signature \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Dealership \_\_\_\_\_ Owner's Signature \_\_\_\_\_

Litho in U.S.A.

T82;CRPD BJ 300884

T83;450D REG1 100984



**PRE-DELIVERY INSPECTION (PDI),  
AFTER-SALE INSPECTION (ASI)**

**MACHINE NUMBERS**

Product Identification Number \_\_\_\_\_ Winch Serial Number \_\_\_\_\_

Engine Serial Number \_\_\_\_\_

**PRE-DELIVERY INSPECTION  
(Required Before Delivery of Machine to Owner)**

Delivered by \_\_\_\_\_ Owner's Name \_\_\_\_\_

Dealer \_\_\_\_\_ Owner's Address \_\_\_\_\_

Date \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

**AFTER-SALE INSPECTION  
(Required During 50 to 100 Hours of Operation)**

Machine Hours \_\_\_\_\_ Owner's Name \_\_\_\_\_

Inspected By \_\_\_\_\_ Owner's Address \_\_\_\_\_

Inspector's Signature \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Dealership \_\_\_\_\_ Owner's Signature \_\_\_\_\_

Litho in U.S.A.

T82;CRPD BJ 300884

T83;450D OWN1 100984

**Owner Copy 1**



*Product Inspection Manual (PIM) Check List for 450D*

| Procedure                          | INSPECTION COMPLETED     |                          | Comments |
|------------------------------------|--------------------------|--------------------------|----------|
|                                    | PDI<br>OK                | ASI<br>OK                |          |
| 1. Engine coolant level            | <input type="checkbox"/> | <input type="checkbox"/> |          |
| 2. Coolant freeze protection       | <input type="checkbox"/> |                          |          |
| 3. Belt tension                    |                          | <input type="checkbox"/> |          |
| 4. Engine oil level                | <input type="checkbox"/> | <input type="checkbox"/> |          |
| 5. Drain fuel filter               |                          | <input type="checkbox"/> |          |
| 6. Fuel tank sump                  |                          | <input type="checkbox"/> |          |
| 7. Transmission oil level          | <input type="checkbox"/> | <input type="checkbox"/> |          |
| 8. Battery electrolyte level       | <input type="checkbox"/> | <input type="checkbox"/> |          |
| 9. Air cleaner                     |                          | <input type="checkbox"/> |          |
| 10. Front idler oil level          |                          | <input type="checkbox"/> |          |
| 11. Track carrier roller oil level |                          | <input type="checkbox"/> |          |
| 12. Track roller oil level         |                          | <input type="checkbox"/> |          |
| 13. Final drives oil level         | <input type="checkbox"/> |                          |          |
| 14. Check hardware tightness       | <input type="checkbox"/> | <input type="checkbox"/> |          |
| 15. Lubricate grease fittings      | <input type="checkbox"/> | <input type="checkbox"/> |          |
| 16. Change hydraulic oil filter    |                          | <input type="checkbox"/> |          |
| 17. Change transmission oil filter |                          | <input type="checkbox"/> |          |
| 18. Neutral start switch           | <input type="checkbox"/> | <input type="checkbox"/> |          |
| 19. Gauges and indicators          | <input type="checkbox"/> | <input type="checkbox"/> |          |
| 20. Engine speeds                  |                          | <input type="checkbox"/> |          |

Litho in U.S.A.

**Dealer Copy 2**

T82/CRPD DD 080984

T83/450D DLR2 100984





*Product Inspection Manual (PIM) Check List for 450D*

| Procedure                          | INSPECTION COMPLETED     |                          | Comments |
|------------------------------------|--------------------------|--------------------------|----------|
|                                    | PDI<br>OK                | ASI<br>OK                |          |
| 1. Engine coolant level            | <input type="checkbox"/> | <input type="checkbox"/> |          |
| 2. Coolant freeze protection       | <input type="checkbox"/> |                          |          |
| 3. Belt tension                    |                          | <input type="checkbox"/> |          |
| 4. Engine oil level                | <input type="checkbox"/> | <input type="checkbox"/> |          |
| 5. Drain fuel filter               |                          | <input type="checkbox"/> |          |
| 6. Fuel tank sump                  |                          | <input type="checkbox"/> |          |
| 7. Transmission oil level          | <input type="checkbox"/> | <input type="checkbox"/> |          |
| 8. Battery electrolyte level       | <input type="checkbox"/> | <input type="checkbox"/> |          |
| 9. Air cleaner                     |                          | <input type="checkbox"/> |          |
| 10. Front idler oil level          |                          | <input type="checkbox"/> |          |
| 11. Track carrier roller oil level |                          | <input type="checkbox"/> |          |
| 12. Track roller oil level         |                          | <input type="checkbox"/> |          |
| 13. Final drives oil level         | <input type="checkbox"/> |                          |          |
| 14. Check hardware tightness       | <input type="checkbox"/> | <input type="checkbox"/> |          |
| 15. Lubricate grease fittings      | <input type="checkbox"/> | <input type="checkbox"/> |          |
| 16. Change hydraulic oil filter    |                          | <input type="checkbox"/> |          |
| 17. Change transmission oil filter |                          | <input type="checkbox"/> |          |
| 18. Neutral start switch           | <input type="checkbox"/> | <input type="checkbox"/> |          |
| 19. Gauges and indicators          | <input type="checkbox"/> | <input type="checkbox"/> |          |
| 20. Engine speeds                  |                          | <input type="checkbox"/> |          |

Litho in U.S.A.



*Product Inspection Manual (PIM) Check List for 450D*

| Procedure                          | INSPECTION COMPLETED     |                          | Comments |
|------------------------------------|--------------------------|--------------------------|----------|
|                                    | PDI<br>OK                | ASI<br>OK                |          |
| 1. Engine coolant level            | <input type="checkbox"/> | <input type="checkbox"/> |          |
| 2. Coolant freeze protection       | <input type="checkbox"/> |                          |          |
| 3. Belt tension                    |                          | <input type="checkbox"/> |          |
| 4. Engine oil level                | <input type="checkbox"/> | <input type="checkbox"/> |          |
| 5. Drain fuel filter               |                          | <input type="checkbox"/> |          |
| 6. Fuel tank sump                  |                          | <input type="checkbox"/> |          |
| 7. Transmission oil level          | <input type="checkbox"/> | <input type="checkbox"/> |          |
| 8. Battery electrolyte level       | <input type="checkbox"/> | <input type="checkbox"/> |          |
| 9. Air cleaner                     |                          | <input type="checkbox"/> |          |
| 10. Front idler oil level          |                          | <input type="checkbox"/> |          |
| 11. Track carrier roller oil level |                          | <input type="checkbox"/> |          |
| 12. Track roller oil level         |                          | <input type="checkbox"/> |          |
| 13. Final drives oil level         | <input type="checkbox"/> |                          |          |
| 14. Check hardware tightness       | <input type="checkbox"/> | <input type="checkbox"/> |          |
| 15. Lubricate grease fittings      | <input type="checkbox"/> | <input type="checkbox"/> |          |
| 16. Change hydraulic oil filter    |                          | <input type="checkbox"/> |          |
| 17. Change transmission oil filter |                          | <input type="checkbox"/> |          |
| 18. Neutral start switch           | <input type="checkbox"/> | <input type="checkbox"/> |          |
| 19. Gauges and indicators          | <input type="checkbox"/> | <input type="checkbox"/> |          |
| 20. Engine speeds                  |                          | <input type="checkbox"/> |          |

Litho in U.S.A.

**Owner Copy 2**

T82;CRPD DD 080984

T83;450D OWN2 100984



*Product Inspection Manual (PIM) Check List for 450D*

| Procedure                        | INSPECTION COMPLETED     |                          | Comments |
|----------------------------------|--------------------------|--------------------------|----------|
|                                  | PDI<br>OK                | ASI<br>OK                |          |
| 21. Clutch pedal free travel     |                          | <input type="checkbox"/> | _____    |
| 22. Transmission operation       |                          | <input type="checkbox"/> | _____    |
| 23. Brake                        | <input type="checkbox"/> | <input type="checkbox"/> | _____    |
| 24. Steering                     | <input type="checkbox"/> | <input type="checkbox"/> | _____    |
| 25. Brake lock                   | <input type="checkbox"/> |                          | _____    |
| 26. Lights                       | <input type="checkbox"/> |                          | _____    |
| 27. Air flow pretest             | <input type="checkbox"/> |                          | _____    |
| 28. Radiator/oil cooler air flow | <input type="checkbox"/> |                          | _____    |
| 29. Change engine oil and filter |                          | <input type="checkbox"/> | _____    |
| 30. Check for fluid leakage      | <input type="checkbox"/> | <input type="checkbox"/> | _____    |
| 31. Clean the machine            | <input type="checkbox"/> |                          | _____    |

Litho in U.S.A.

T82/CRPD DE 080984

**Dealer Copy 3**

T83/450D DLR3 100984



*Product Inspection Manual (PIM) Check List for 450D*

| Procedure                        | INSPECTION COMPLETED     |                          | Comments |
|----------------------------------|--------------------------|--------------------------|----------|
|                                  | PDI<br>OK                | ASI<br>OK                |          |
| 21. Clutch pedal free travel     |                          | <input type="checkbox"/> | _____    |
| 22. Transmission operation       |                          | <input type="checkbox"/> | _____    |
| 23. Brake                        | <input type="checkbox"/> | <input type="checkbox"/> | _____    |
| 24. Steering                     | <input type="checkbox"/> | <input type="checkbox"/> | _____    |
| 25. Brake lock                   | <input type="checkbox"/> |                          | _____    |
| 26. Lights                       | <input type="checkbox"/> |                          | _____    |
| 27. Air flow pretest             | <input type="checkbox"/> |                          | _____    |
| 28. Radiator/oil cooler air flow | <input type="checkbox"/> |                          | _____    |
| 29. Change engine oil and filter |                          | <input type="checkbox"/> | _____    |
| 30. Check for fluid leakage      | <input type="checkbox"/> | <input type="checkbox"/> | _____    |
| 31. Clean the machine            | <input type="checkbox"/> |                          | _____    |

Litho in U.S.A.

T82;CRPD DE 080984

T83;450D REG3 100984

**Region Copy 3**





Product Inspection Manual (PIM) Check List for 450D

| Procedure                        | INSPECTION COMPLETED     |                          | Comments |
|----------------------------------|--------------------------|--------------------------|----------|
|                                  | PDI<br>OK                | ASI<br>OK                |          |
| 21. Clutch pedal free travel     |                          | <input type="checkbox"/> |          |
| 22. Transmission operation       |                          | <input type="checkbox"/> |          |
| 23. Brake                        | <input type="checkbox"/> | <input type="checkbox"/> |          |
| 24. Steering                     | <input type="checkbox"/> | <input type="checkbox"/> |          |
| 25. Brake lock                   | <input type="checkbox"/> |                          |          |
| 26. Lights                       | <input type="checkbox"/> |                          |          |
| 27. Air flow pretest             | <input type="checkbox"/> |                          |          |
| 28. Radiator/oil cooler air flow | <input type="checkbox"/> |                          |          |
| 29. Change engine oil and filter |                          | <input type="checkbox"/> |          |
| 30. Check for fluid leakage      | <input type="checkbox"/> | <input type="checkbox"/> |          |
| 31. Clean the machine            | <input type="checkbox"/> |                          |          |

Litho in U.S.A.

T82/CRPD DE 080984

T83/450D OWN3 100984



# JOHN DEERE SERVICE LITERATURE AVAILABLE...

To order these publications fill out this form and the payment information and mail it to the address above. Make checks payable to Deere & Co. Service Publications. Please allow three weeks for delivery. No COD orders, please. Do not send cash or stamps. To place credit card orders, call **1-800-522-7448**. If you want manuals or catalogs for equipment not shown on this list, provide the model number, serial number, and name of the product.

John Deere Distribution Service Center  
Department S/P  
P.O. Box 186, Moline, IL 61266-0186

Please send to . . .

Name \_\_\_\_\_

Address \_\_\_\_\_

Town \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_

| Title                                       | Order No. | Qty. | Price Each |
|---|-----------|------|------------|
| Parts Catalog<br>450D Crawler Bulldozer     | PC-1891   |      |            |
| Operator's Manual<br>450D Crawler Bulldozer | OM-T80145 |      |            |
| Technical Manual<br>450D Crawler Bulldozer  | TM-1291   |      |            |

NOTE: If you want manuals or catalogs for equipment not shown on this list, list the model number, serial number and name of the equipment below.

|   |             |  |
|---|-------------|--|
| FOS Manual - Hydraulics   | FOS-1003B   |  |
| FOS Manual - Electrical Systems   | FOS-2004B   |  |
| FOS Manual - Engines  | FOS-3005B   |  |
| FOS Manual - Power Trains   | FOS-4004B   |  |
| FOUR FOS MANUALS (above)  | FOS-90 Set  |  |
| FOS Manual - Shop Tools   | FOS-5103B   |  |
| FOS Manual - Welding  | FOS-5204B   |  |
| FOS Manual - Belts and Chains   | FOS-5303B   |  |
| FOS Manual - Bearings and Seals   | FOS-5403B   |  |
| FOS Manual - Tires and Tracks   | FOS-5505B   |  |
| FOS Manual - Mowing and Spraying Equipment  | FOS-5603B   |  |
| FOS Manual - Air Conditioning   | FOS-5704B   |  |
| FOS Manual - Fuels, Lubricants and Coolants   | FOS-5804B   |  |
| FOS Manual - Fiber Glass  | FOS-5902B   |  |
| FOS Manual - Fasteners  | FOS-6002B   |  |
| FOS Manual - Iden. of Parts Failures  | FOS-6102B   |  |
| SET OF ELEVEN FOS MANUALS<br>FOS-51B, 52B, 53B, 54B, 55B, 56B, 57B, 58B, 59B, 60B and 61B | FOS-71 Set  |  |
| SET OF ALL FIFTEEN FOS MANUALS  | FOS-181 Set |  |

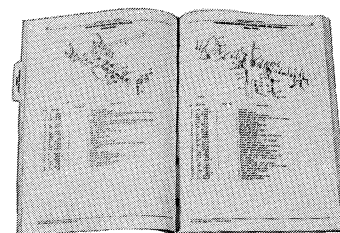
Illinois State Residents add 6% for ROT . . . . .

Check or money order in U.S. Dollars enclosed . . . . . Total  
(Do not send cash or stamps)

Prices listed will be effective until 31 December 1984.

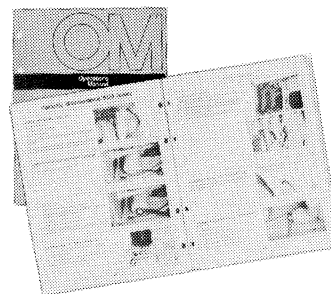
SP-219 Litho in U.S.A. APR-84

## PARTS CATALOG



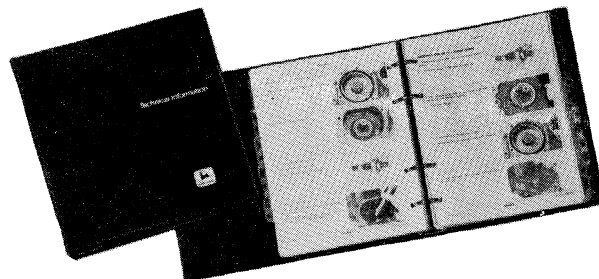
A parts catalog containing exploded view illustrations and lists of all parts is useful when purchasing service parts. Helps identify the correct parts. Useful in assembling and disassembling.

## OPERATOR'S MANUAL



An extra copy of the operator's manual may be important if the copy furnished with your machine is misplaced.

## TECHNICAL MANUAL



The technical manual is a service guide for your machine. Included in the manual are specifications, diagnosis and adjustments, illustrations of special assembly and disassembly procedures, hydraulic oil flows, and wiring diagrams.

## FOS MANUALS



Fundamentals of Service manuals contain basic fundamentals of service and operation. These manuals are applicable to most types and makes of machinery. Each starts with basic theory; covers operation, basic servicing, diagnosis, and testing. They are fully illustrated with colorful diagrams.

**For current prices of John Deere Service Literature, please call 1-800-522-7448**



# John Deere service keeps you on the job

## JOHN DEERE PARTS

We help minimize downtime by putting the right parts in your hands in a hurry.

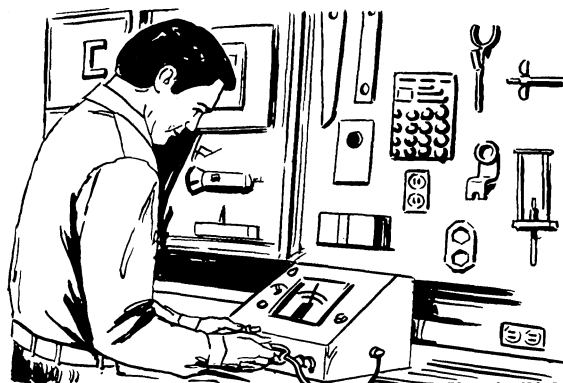
That's why we maintain a large and varied inventory—to stay a jump ahead of your needs.



AB6;TS100 040;IBC A 041082

## THE RIGHT TOOLS

Precision tools and testing equipment enable our Service Department to locate and correct troubles quickly . . . to save you time and money.



AB6;TS101 040;IBC B 041082

## WELL-TRAINED TECHNICIANS

School is never out for John Deere service technicians.

Training schools are held regularly to be sure our personnel know your equipment and how to maintain it.

Result?

Experience you can count on!



AB6;TS102 040;IBC C 041082

## PROMPT SERVICE

Our goal is to provide prompt, efficient care when you want it and where you want it.

We can make repairs at your place or at ours, depending on the circumstances.

See us.

Depend on us.

**John Deere Service Superiority: We'll be around when you need us.**



AB6;TS103 040;IBC D 041082

